CTC CLATRONIC®

SERVICE MANUAL

STEREO - FARBFERNSEHGERÄT
COLOUR TELEVISION

CTV 287 VT
CTV 289 VT / P.I.P.
CTV 290 VT / P.I.P.
CTV 317
CTV 323
CTV 324
CTV 325

CHASSIS F-11 R4 + R5

CTC CLATRONIC INTERNATIONAL GMBH D-47906 Kempen · Industriering-Ost 40
Telefon (0 21 52) 20 06-0 · Telefax (0 21 52) 20 06 60 · Teletex 17-21 52 329 ucla

CTC CLATRONIC ®
INTERNATIONAL GmbH

Industriering Ost 40
47906 Kempen

Telefon-Zentr. : 02152/2006-0
Telefon-TKD : 02152/2006-22
Fax : 02152/2006-60

Technische Information

Datum: 17.10.1995
Modell: CTV 287/289/290/317/323/324/325 **(Chassis F.11)**
lfd. Nr.: 25

Da die Geräte im laufe der Zeit weiterentwickelt wurden, gibt es zu den einzelnen Gerätetypen verschiedene Schaltbilder, die den Geräten in Originalverpackung beiliegen.

Gerätetyp	mögliche Schaltbild Nr.
CTV 287	88.65.50.36.500 / 88.65.50.36.800 / 88.65.50.38.100-MAG95 / 88.65.50.372.00
CTV 289 P.I.P	88.65.50.36.800 / 88.65.50.372.00(Stereo-Modul aus ...36.800)
CTV 290 P.I.P	88.65.50.36.800 / 88.65.50.372.00(Stereo-Modul aus ...36.800)
CTV 317	88.65.50.36.800 / 88.65.50.372.00
CTV 323	88.65.50.372.00
CTV 324 / 16:9	88.65.50.372.00 + 16:9 Zusatz
CTV 325 / 16:9	88.65.50.372.00 + 16:9 Zusatz

Schaltbild Nr. 88.65.50.36.500	F11R4	für Geräte mit manueller CUT-OFF-Einstellung
Schaltbild Nr. 88.65.50.36.800	F11R4	für Geräte mit AUTO-CUT-OFF
Schaltbild Nr. 88.65.50.38.100-MAG95	F11R4	wird nicht benötigt
Schaltbild Nr. 88.65.50.372.00	F11R5	für Geräte mit PCF84C841/169(..210) Prozessor
Schaltbild Nr. 88.65.5036900	P.I.P. - Zusatz	
Schaltbild Nr. 88.65.5038200	16:9 - Zusatz	

Mit freundlichen Grüßen

Ihr CTC-Clatronic-Kundendienst

CTC CLATRONIC ®
INTERNATIONAL GmbH

Industriering Ost 40
47906 Kempen

Telefon-Zentr. : 02152/2006-0
Telefon-TKD : 02152/2006-22
Fax : 02152/2006-60

Technische Information

Datum: 03.04.1995
Modell: CTV 287/289/290 **(Chassis F.11)**
lfd. Nr.: 19

Videotextempfang über Scartbuchsen

Einbauanleitung für Nachrüstsatz

R 102 (330R von Basis Tr 28 gegen Masse) entfernen

J 133 entfernen

von Punkt J 133-J 137 Brücke zur Basis Tr 13 legen

J 132 durch Widerstand 68R ersetzen

R 86 entfernen und hierfür Platine einsetzen (P3 - P4 anstelle R 86, X1 - X2 an PIP-Anschluß H7-H6)

X3 an 68R (J 132)

X4 an +12V (R 332)

Bei Geräten mit P.I.P. muß die 2-polige Stiftleiste (die an H7-H6 kommt) der Nachrüstplatine entfernt und durch 2 Kabel an X1 + X2 ersetzt werden. Diese sind dann entsprechend anzuschließen.

Mit freundlichen Grüßen

Ihr CTC-Clatronic-Kundendienst

Anlage: Schaltungsauszug

CTC CLATRONIC ®
INTERNATIONAL GmbH

Industriering Ost 40
47906 Kempen

Telefon-Zentr. : 02152/2006-0
Telefon-TKD : 02152/2006-22
Fax : 02152/2006-60

Technische Information

Datum: 25.07.1995
Modell: CTV 287/289/290 **(Chassis F.11)**
lfd. Nr.: 18A

Chassis F11

Im Chassis F11 wurden als IC9 verschiedene IC's verwendet.

1. TDA 8361 (Art.# : 752365) bzw. TDA 8362-N3 (Art.# : 752351)
2. TDA 8361-**A** (Art.# : 752374) bzw. TDA 8362-**A** (Art.# : 752379)

In beiden Fällen kann TDA 8362 durch TDA 8361 ersetzt werden, da die SECAM-Funktionen im TDA 8362 in unseren Geräten nicht benötigt werden. Diese unterstützen nur Pal B/G (IC10 nicht bestückt).

Die IC's unter **Pkt.1** sind aber **NICHT** mit denen unter **Pkt.2 kompatibel**.
Bei Geräten, die mit AUTO-CUT-OFF ausgerüstet sind, wurde TDA 8361-A bzw. TDA 8362-A verwendet (Schaltbild Nr. 88.65.50.36.800, **RGB-Endstufenplatine 1.460.00T Art.Nr.: 720247**).
Geräte mit manueller CUT-OFF-Einstellung sind mit dem TDA 8361 bzw. TDA 8362-N3 ausgerüstet (Schaltbild Nr. 88.65.50.36.500, **RGB-Endstufenplatine 01.438.00 Art.Nr.: 720233**).

Das passende Schaltbild ist jedem Gerät beigelegt.

Videotext über Scart:

Wir möchten an dieser Stelle darauf hinweisen, daß diese Funktion vom CTV 287, CTV 289 und CTV 290 bei den ersten Geräten **nicht** unterstützt wurde. Hierbei handelt es sich **nicht** um einen technischen **Defekt**.

Diese Funktion kann nachgerüstet werden. Eine entsprechende Platine ist im Schaltbild bereits abgebildet. Der Nachrüstsatz hat die Art.Nr.: 720248.

Mit freundlichen Grüßen

Ihr CTC-Clatronic-Kundendienst

RÉCEPTEUR DE TÉLÉVISION AVEC SYSTÈME AUTOMATIQUE "CUT-OFF"

Quand on allume l'appareil en appuyant sur l'interrupteur general 1, des lignes blanches apparaissent en haut de l'écran pendant quelquès secondes.
Ceci n'est pas en défaut. Le système automatique "CUT-OFF" vérifie le tube cathodique en position "CUT-OFF", ainsi la luminosité et le contraste restent stables pendant la durée de vie du tube.

RECEPTOR DE TV CON SISTEMA AUTOMATICO DE "CUT-OFF"

Si se utiliza el interruptor de encendido y apagado 1, apareceran algunas lineas blancas en la parte superior de la pantalla durante un segundo; esto no es un defecto, si no que es una operacion automatica de comprobar la condicion de "CUT-OFF" del tubo de imagen a fin de garantizar la estabilidad de brillo y contraste a lo largo del ciclo de vida del mismo.

TV RECEIVER WITH AUTOMATIC "CUT-OFF" SYSTEM

Using the ON-OFF switch 1 some white lines will appears on top of the screen for a second; this is not a defect but it is an automatic operation to check the picture tube in the CUT-OFF condition to guarantee the brightness and contrast stability during life cycle of the picture tube.

TELEVISOR COM SISTEMA DE DESLIGAR AUTOMÁTICO

Se ligar o televisor usando o botão ON-OFF 1 aparecem por uns segundos algumas linhas brancas no topo do ecran; isto não é um defeito mas uma operacão automática de verificação do cinescópio na função de desligar, para garantir a estabilidade do brilho e contraste durante o ciclo de vida do cinescópio.

CARATTERISTICA DEI TVC EQUIPAGGIATI CON DISPOSITIVI PER AVERE IL CUT-OFF AUTOMATICO.

I televisori equipaggiati con il dispositivo per il CUT-OFF automatico, che consente una totale uniformità della temperatura del bianco garantendo un'assoluta stabilità della luminosità e del contrasto durante tutta la vita del cinescopio, presentano per un tempo inferiore ad un secondo, ad ogni accensione tramite l'interruttore di rete, la visione di alcune righe bianche nella parte alta dello schermo.
La funzione di tali righe é quella di valutare le condizioni del cinescopio e quindi tramite i sistemi di controllo automatico pilotarlo in modo ottimale.

FERNSEHGERÄTE MIT AUTOMATISCHER SPERRPUNKTEIN-STELLUNG DER BILDRÖHRE. (Automatic "CUT-OFF" System)

Beim Einschalten des Gerätes über den Netzschalter können kurzzeitig weiße Linien am oberen Bildrand erscheinen.
Diese automatische Kontrolle der Bildröhre garantiert gleichbleibende Helligkeit und Kontrast während der gesamten Lebensdauer der Bildröhre

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TV-APPARAT MED AUTOMATISK "CUT-OFF" SYSTEM

Hvis apparatet slukkes og igen tændes med netafbryderen (1) vil der kunne ses nogle hvide linier i toppen af billedet i ca. et sekund.
Dette skyldes ikke en fejl i apparatet, men er blot et automatisk check af billedrørets "CUT-OFF" tilstand. Den automatiske "CUT-OFF" kredsløb sikrer stabilitet i lys-og kontrast-balancen i hele billedrørets levetid.

TV-TOESTEL MET AUTOMATISCH "CUT-OFF" SYSTEM

Bij het inschakelen verschijnen bovehaan het scherm enkele witte lijnen gedurende een tijdje. Dit is geen delekt. Automatisch wordt de beeldbuis getest in de "CUT-OFF" positie, om zodoende licht en kontrast stabiel te houden gedurende de levensduur van de beeldbuis.

TV-MOTTAGARE MED AUTOMATISKT "CUT-OFF" SYSTEM

Att använda On-Off knappen 1
Några vita linjer kan uppträda längst upp på skärmen i en sekun; detta är ej något fel utan en automatisk kontroll av bildröret i CUT-OFF läge för att garantera stabilitet vad gäller klarhet och kontrast för bildrörets livslängd.

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INTERNATIONAL GmbH

Industriering Ost 40
47906 Kempen

Telefon-Zentr. : 02152/2006-0
Telefon-TKD : 02152/2006-22
Fax : 02152/2006-60

Technische Information

Datum: 31.05.1995
Modell: CTV 287/289/290 (**Chassis F.11 mit Auto-Cut-Off**)
lfd. Nr.: 20A

Gerät läuft nicht an, kein Bild

folgende Bauteile prüfen

C 121 470uF / 25V

D 35 BA 157

D 36 1N4001

Grünliches Bild

Bei Geräten mit Auto-Cut-Off kann es vorkommen, daß trotz messen der Bildröhrenarbeitspunkte beim Einschalten, das Bild einen Grünstich hat.

Dies ist durch folgende kleine Änderung an der Bildröhrenplatine zu beheben.

R 17 an Pin 6 + R 19 an Pin 14 von IC 1 durch eine Diode 1N4148 ersetzen. Anode an IC.

von Pin 6 einen 820K Widerstand gegen Masse

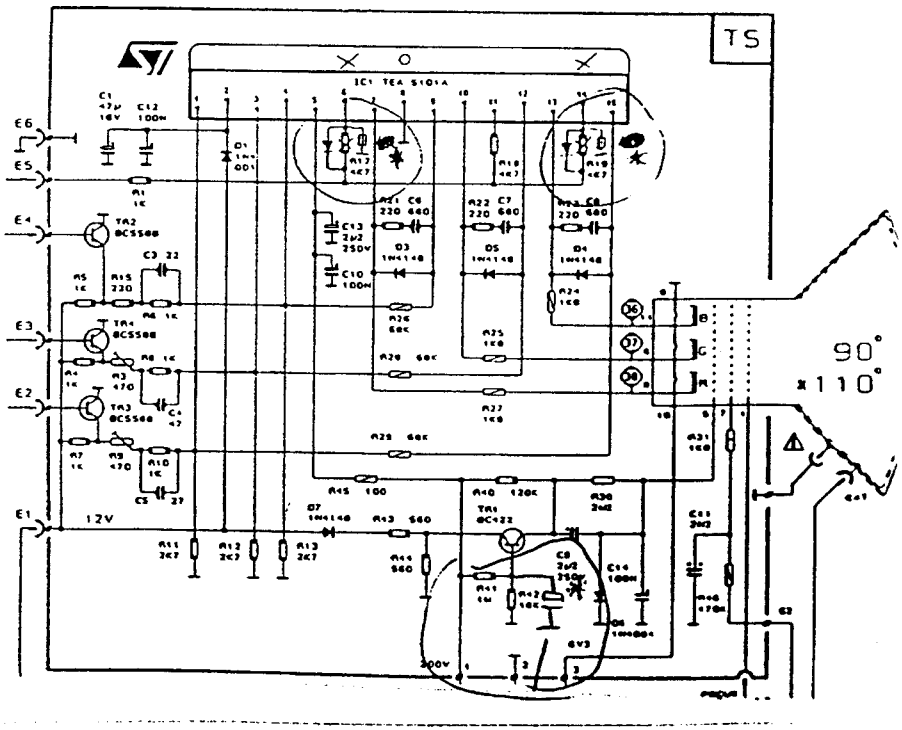
von Pin 14 einen 1M2 Widerstand gegen Masse

parallel zu R 42 einen Elko 10uF / 63V mit + an der Basis von TR 1

Mit freundlichen Grüßen

Ihr CTC-Clatronic-Kundendienst

Anlage: Schaltungsauszug



INTRODUCTION

Auto-Cut-Off

The television is built around a high-volume integration integrated circuit TDA 8361/2A, a new processor for PAL and NTSC system television.
This TDA 8361/2A processor combines all the small signal functions required of a colour television receiver , including operation of an external video and audio of a S-VHS (separate Luminance and Chrominance).
Processor TDA 8361/2A is a video processor containing functions handling HF, sound, horizontal and vertical synchronisation, PAL/NTSC decoding, and RGB control and a black current stabilisation circuit.
It was implemented using BIMOS technology, which combines BIPOLAR methods for handling high-frequency signal and MOS methods for handling digital parts.
In addition it used an integrated delay line TDA 4661, an audio output stage mono, stereo 6+6W, stereo 12+12 W, a vertical output stage TDA 3654B, and a horizontal output stage with BU 508D.
The power supply unit is of the flyback type and controlled by the TDA 4601 integrated circuit.

Principal functions common to both processor version TDA 8361/2A are :

-symmetric IF amplifier directly coupled to surface wave filter
-FM sound multistandard demodulator, not needing regulation
-chroma trap and integrated band-pass filters
-integrated luminance delay line
-PAL/NTSC automatic decoder
-self-regulating horizontal oscillator
-low dissipation (about 700 mW)
-possibility of selecting an external A/V source
-no black-level adjustment due to a black current stabilizer

Functions specific to TDA 8362A :

-multistandard IF circuit for positive and negative modulation
-simple interface with TDA 8395 (SECAM decoder) for PAL and SECAM multistandard applications

INTRODUCTION

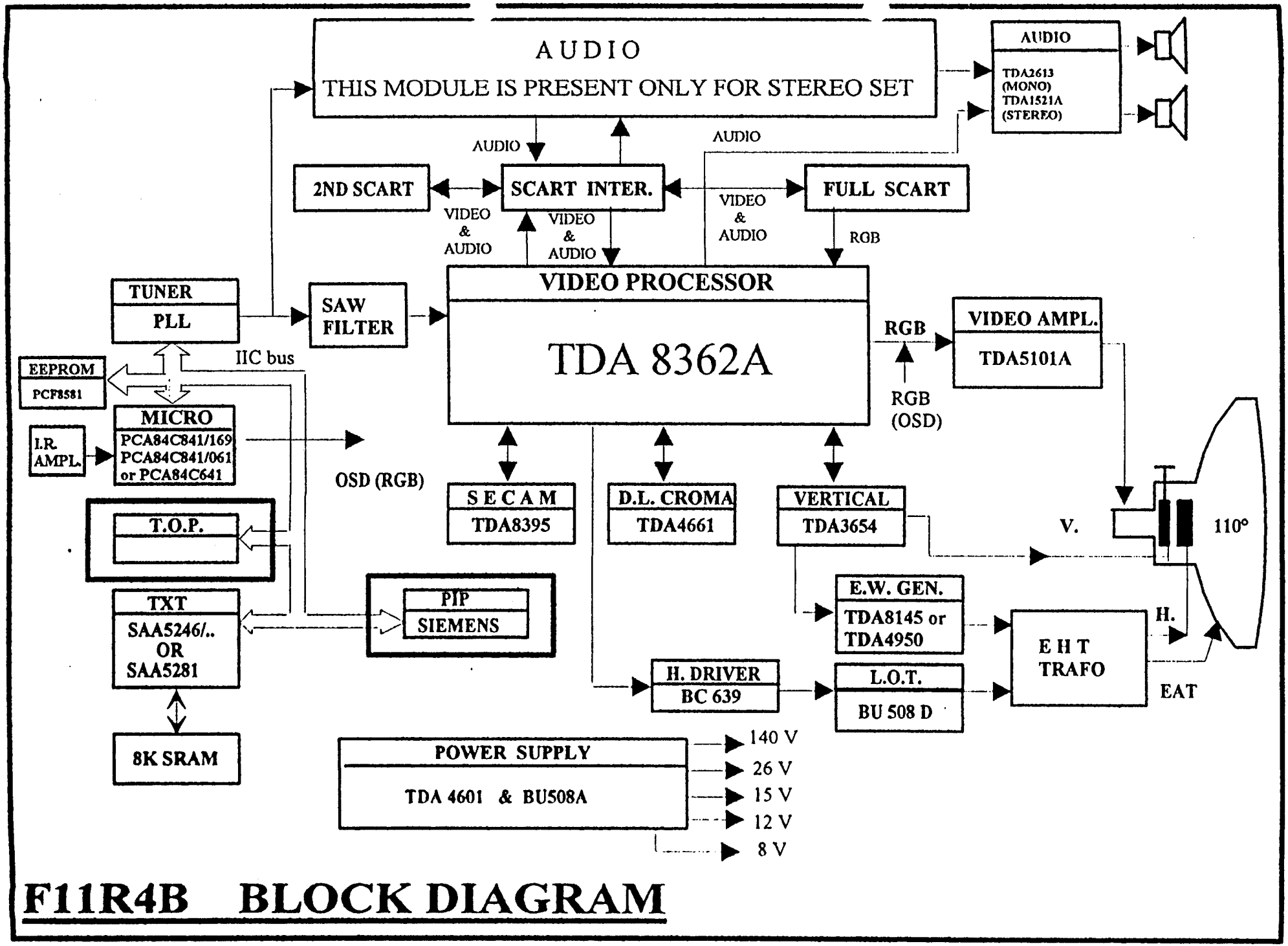
The television is built around a high-volume integration integrated circuit TDA 8361/2, a new processor for PAL and NTSC system television.
This TDA 8361/2 processor combines all the small signal functions required of a colour television receiver , including operation of an external video and audio of a S-VHS (separate Luminance and Chrominance).
Processor TDA 8361/2 is a video processor containing functions handling HF, sound, horizontal and vertical synchronisation, PAL/NTSC decoding, and RGB control.
It was implemented using BIMOS technology, which combines MOS and bipolar methods.
The bipolar technology is used for high-frequency signal processing (ex. video signals) and the MOS technology is used in those parts handling digital signals.
In addition it used an integrated delay line TDA 4661, an audio output stage mono, stereo 6+6W, stereo 12+12 W, a vertical output stage TDA 3654B, and a horizontal output stage with BU 508D.
The power supply unit is of the flyback type and controlled by the TDA 4601 integrated circuit.

Principal functions common to both processor version TDA 8361/2 are :

-symmetric IF amplifier directly coupled to surface wave filter
-FM sound multistandard demodulator, not needing regulation
-chroma trap and integrated band-pass filters
-integrated luminance delay line
-PAL/NTSC automatic decoder
-self-regulating horizontal oscillator
-low dissipation (about 700 mW)
-possibility of selecting an external A/V source

Functions specific to TDA 8362 :

-multistandard IF circuit for positive and negative modulation
-simple interface with TDA 8395 (SECAM decoder) for PAL and SECAM multistandard applications



F11R4B BLOCK DIAGRAM

INTRODUCTION

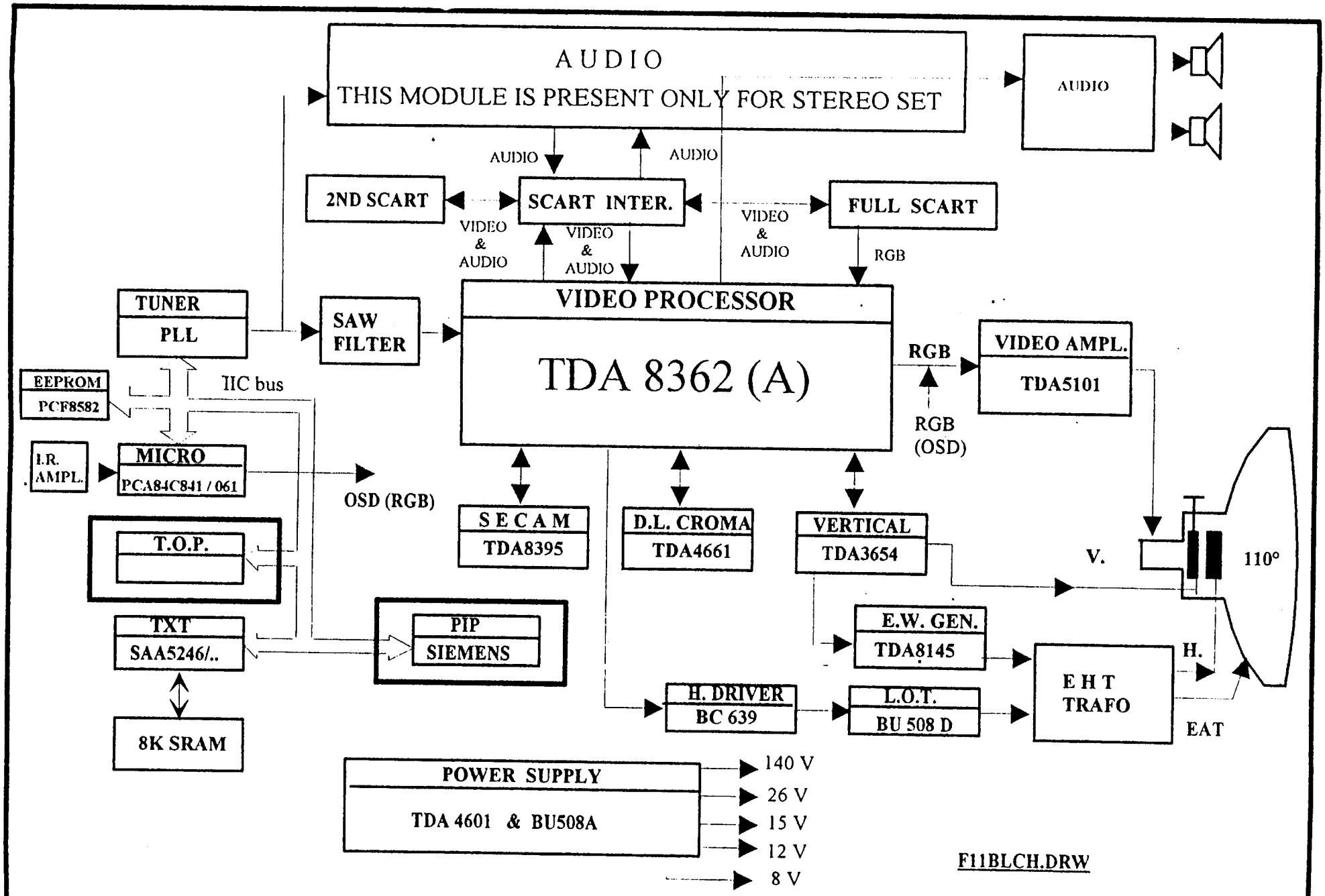
The television is built around a high-volume integration integrated circuit TDA 8361/2, a new processor for PAL and NTSC system television.
This TDA 8361/2 processor combines all the small signal functions required of a colour television receiver , including operation of an external video and audio of a S-VHS (separate Luminance and Chrominance).
Processor TDA 8361/2 is a video processor containing functions handling HF, sound, horizontal and vertical synchronisation, PAL/NTSC decoding, and RGB control.
It was implemented using BIMOS technology, which combines MOS and bipolar methods.
The bipolar technology is used for high-frequency signal processing (ex. video signals) and the MOS technology is used in those parts handling digital signals.
In addition it used an integrated delay line TDA 4661, an audio output stage mono, stereo 6+6W, stereo 12+12 W, a vertical output stage TDA 3654B, and a horizontal output stage with BU 508D.
The power supply unit is of the flyback type and controlled by the TDA 4601 integrated circuit.

Principal functions common to both processor version TDA 8361/2 are :

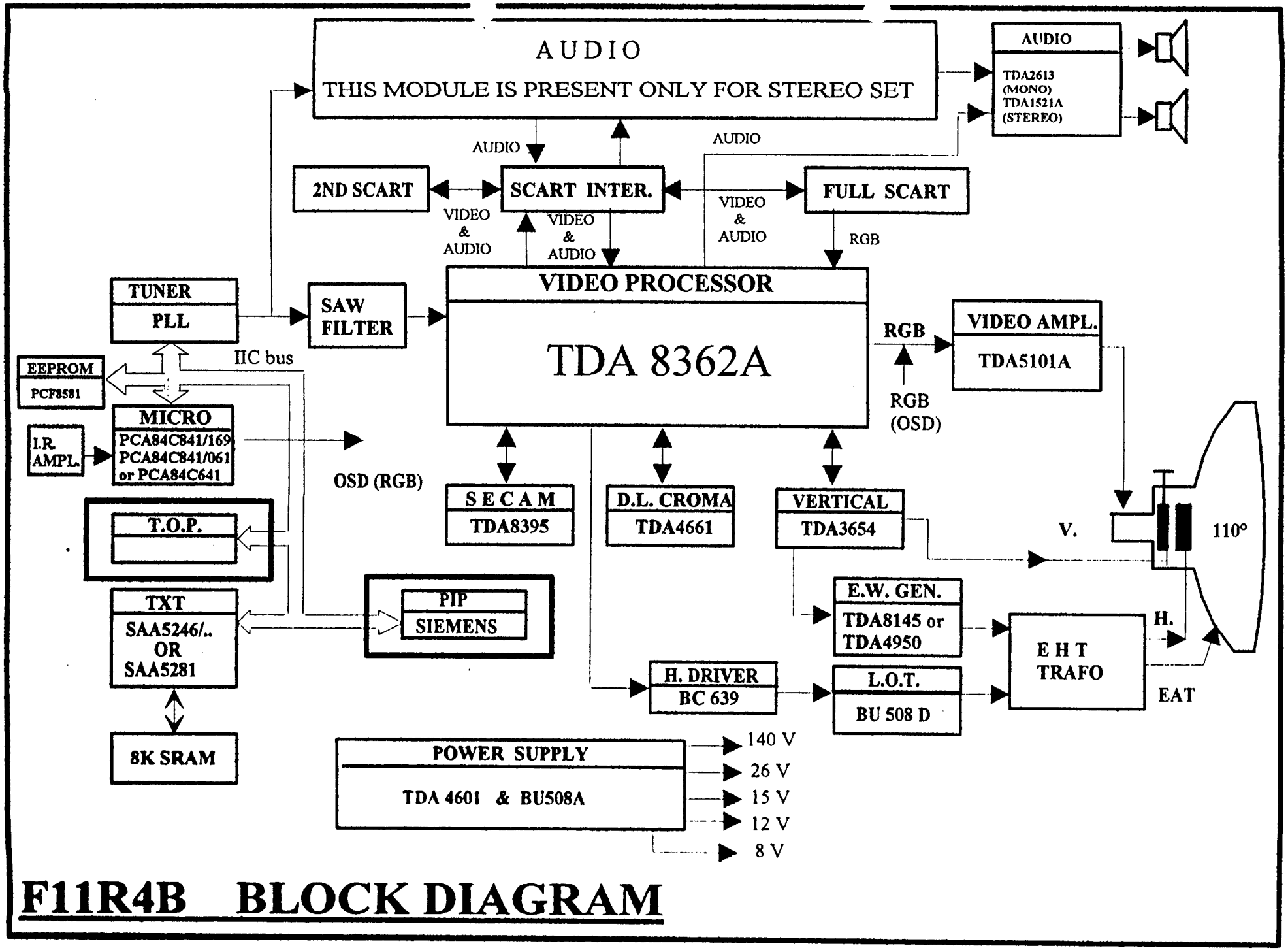
-symmetric IF amplifier directly coupled to surface wave filter
-FM sound multistandard demodulator, not needing regulation
-chroma trap and integrated band-pass filters
-integrated luminance delay line
-PAL/NTSC automatic decoder
-self-regulating horizontal oscillator
-low dissipation (about 700 mW)
-possibility of selecting an external A/V source

Functions specific to TDA 8362 :

-multistandard IF circuit for positive and negative modulation
-simple interface with TDA 8395 (SECAM decoder) for PAL and SECAM multistandard applications



F11 BLOCK DIAGRAM



F11R4B BLOCK DIAGRAM

ALIGNMENT

Auto-Cut-Off

38.9 MHz and AFC (TP2)

Connect a 38.9 MHz intermediate-frequency generator to the tuner's IF output pin 17 and adjust the core L 4 so as to obtain 4,5 V at pin 9 of TDA 8361/2A.

POWER SUPPLY (TP3)

Measure the direct voltage at the terminals of diode DJ1 or D38 and potentiometer R162 so as to obtain a voltage of 142/152 V.

AGC (TP1)

Apply a 60dBuV (+/- 1 dB) RF signal, band III, channel 10-to-12, and adjust potentiometer R111 so as to obtain a voltage of about 8V at tuner pin no. 5 (This voltage depends on the tuner used; so check on the letter's characteristics.)

WHITE SETTING

ADJUSTMENT WITH ANALOG VOLTMETER

-Power on TV SET
-Tune to a signal with white screen
-Contrast control set to minimun
-Adjust brightness to 2,5 V.D.C. on pin 17 TDA8361/2A
-Analog voltmeter 200 V.D.C. full scale
-Check for the highest P.T. cathode voltage than adjust it for 165 V.D.C. via G2 potentiometer (on E.H.T. transformer)

VERTICAL CENTERING

-Adjust R194 (VA) for proper vertical height.
-Adjust R192 (VL) for proper vertical linearity.
Cut /solder the R215 and/or R216 and/or R257 in order to obtain the right vertical geometric centering between CRT and signal. (for example, use a test-pattern signal)

HORIZONTAL CENTERING AND EAST-WEST CORRECTION

-Adjust R186 (HC) for proper horizontal centering
-Adjust R205 (HA) for proper horizontal width
-Adjust R200 (OW) for proper pin-cushion
-Adjust R203 (TZ) for proper trapezium

ALIGNMENT

38.9 MHz and AFC (TP2)

Connect a 38.9 MHz intermediate-frequency generator to the tuner's IF output pin 17 and adjust the core L 4 so as to obtain 3,5 V at pin 44 of TDA 8361/2.

POWER SUPPLY (TP3)

Measure the direct voltage at the terminals of diode DJ1 or D38 and potentiometer R162 so as to obtain a voltage of 142/152 V.

AGC (TP1)

Apply a 60dBuV (+/- 1 dB) RF signal, band III, channel 10-to-12, and adjust potentiometer R111 so as to obtain a voltage of about 8V at tuner pin no. 5 (This voltage depends on the tuner used; so check on the letter's characteristics.)

WHITE SETTING

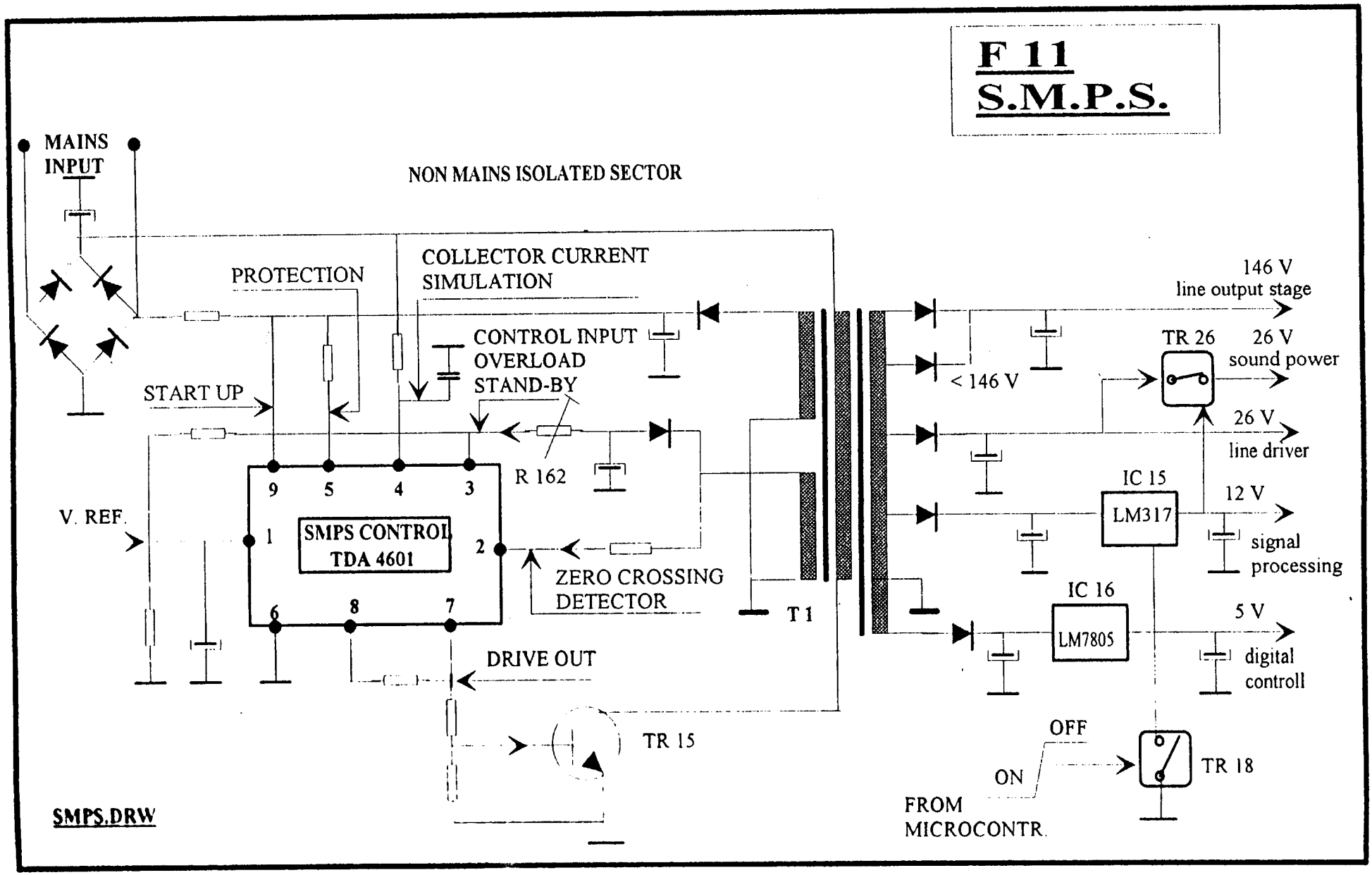
-Tune to a channel with colour test-pattern signal.
-Position level potentiometers R18, R15, R14 and gain potentiometers R3 and R9 on the CRT socket, locating centrally.
-Adjust the TV receiver to maximum brightness, minimum colour and contrast.
-Switch the TV to AV using the corresponding button on the remote control.
-Adjust potentiometer G2 (EHT transformer) to obtain a barely visible screen. The screen usually appears with a predominant colour hue.
-Adjust the level potentiometers of the order two cathodes that are different from the predominating colour in order to obtain the white screen. If, for example, the predominant colour of the screen is red, the potentiometers of the blue cathode R14 and the green cathode R15 are adjusted.
-Return to TV mode with the appropriate remote-control button.
-Check that the hue of the colours of the colour of test-pattern picture are correct. If necessary adjust the potentiometers R3-R9

VERTICAL CENTERING

-Adjust R194 (VA) for proper vertical height
-Adjust R192 (VL) for proper vertical linearity
Cut /solder the R215 and/or R216 in order to obtain the right vertical geometric centering between CRT and signal (for example, use a test-pattern signal)

HORIZONTAL CENTERING AND EAST-WEST CORRECTION

-Adjust R186 (HC) for proper horizontal centering
-Adjust R205 (HA) for proper horizontal width
-Adjust R200 (OW) for proper pin-cushion
-Adjust R203 (TZ) for proper trapezium


F 11
S.M.P.S.
MAINS INPUT
NON MAINS ISOLATED SECTOR
PROTECTION
COLLECTOR CURRENT SIMULATION
CONTROL INPUT
OVERLOAD
STAND-BY
START UP
R 162
V. REF.
9
5
4
3
1
SMPS CONTROL
TDA 4601
2
6
8
7
ZERO CROSSING DETECTOR
T1
DRIVE OUT
TR 15
SMPS.DRW
146 V
line output stage
< 146 V
TR 26
26 V
sound power
26 V
line driver
IC 15
LM317
12 V
signal processing
IC 16
LM7805
5 V
digital controll
OFF
ON
FROM MICROCONTR.
TR 18

STEREO NICAM BG MODULE

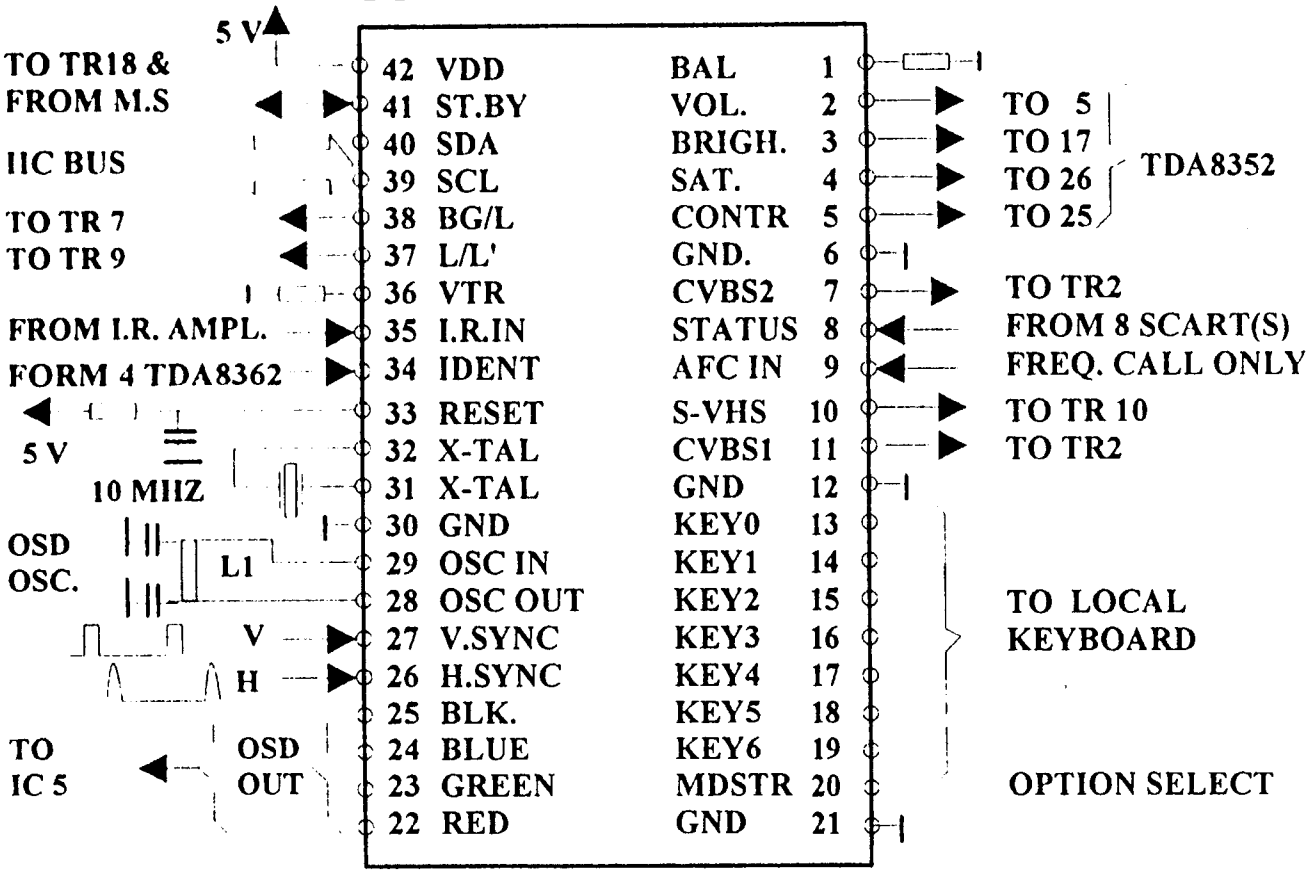
-Apply antenna signal PAL-BG DUAL 5,5 / 5,74
-Tune above signal
-Remove sound carrier
-Adjust L 3 for the minimum video signal on pin 17 of IC 5
-Insert the sound carrier modulation R= 1 KHz L= 3 KHz
-Adjust L 7 for maximum sinusoidal signal on pin 9 of IC 5
-Adjust L 5 for maximum sinusoidal signal on pin 8 of IC 5
-Switch pattern generator from Dual to Stereo
-Eliminate left modulation (3 KHz)
-Adjust R 79 for minimum sinusoidal signal on pin 4 connector SM audio
-Reinsert left modulation and verify right stereo function
-Apply a Nicam BG signal in antenna
-Verify the correct demodulation of Nicam signal (no alignment is required)

STEREO NICAM DECODER STANDARD I

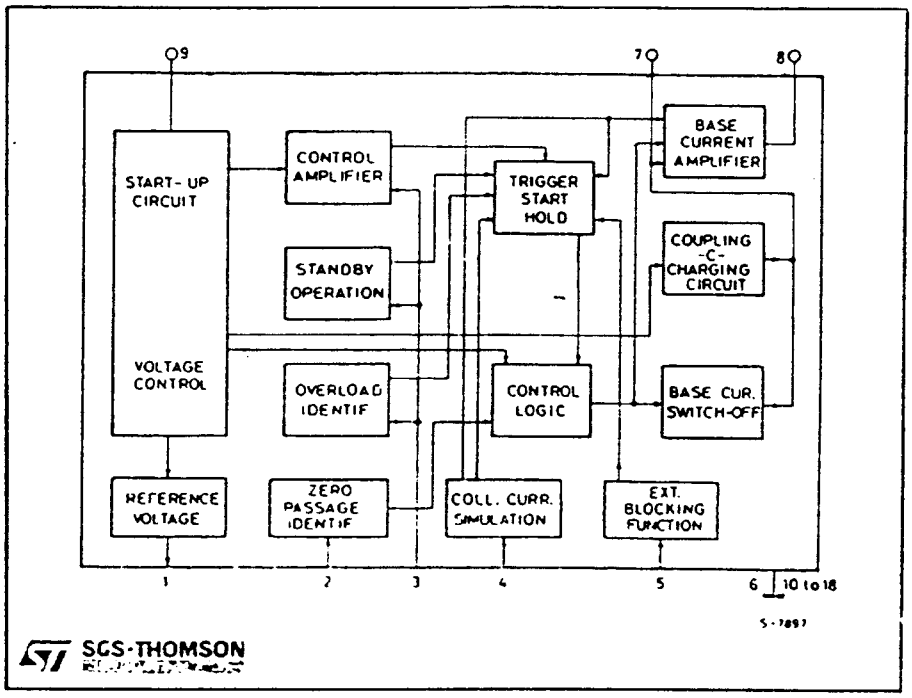
-Tune to a colour bar signal applied to the antenna (E.S. PAL I-NICAM)
-Remove the sound carrier
-Adjust L 3 for the minimum video signal on pin 17 of IC 5
-Insert analogue sound carrier
-Adjust L 7 for maximum sinusoidal signal on pin 9 of IC 5
-Adjust R 79 to obtain the same signal between NICAM and MONO FM signals.

F 11 MICROCONTROLLER

IC 1 PCF84C841 / 061



F11IIMICR.DRW

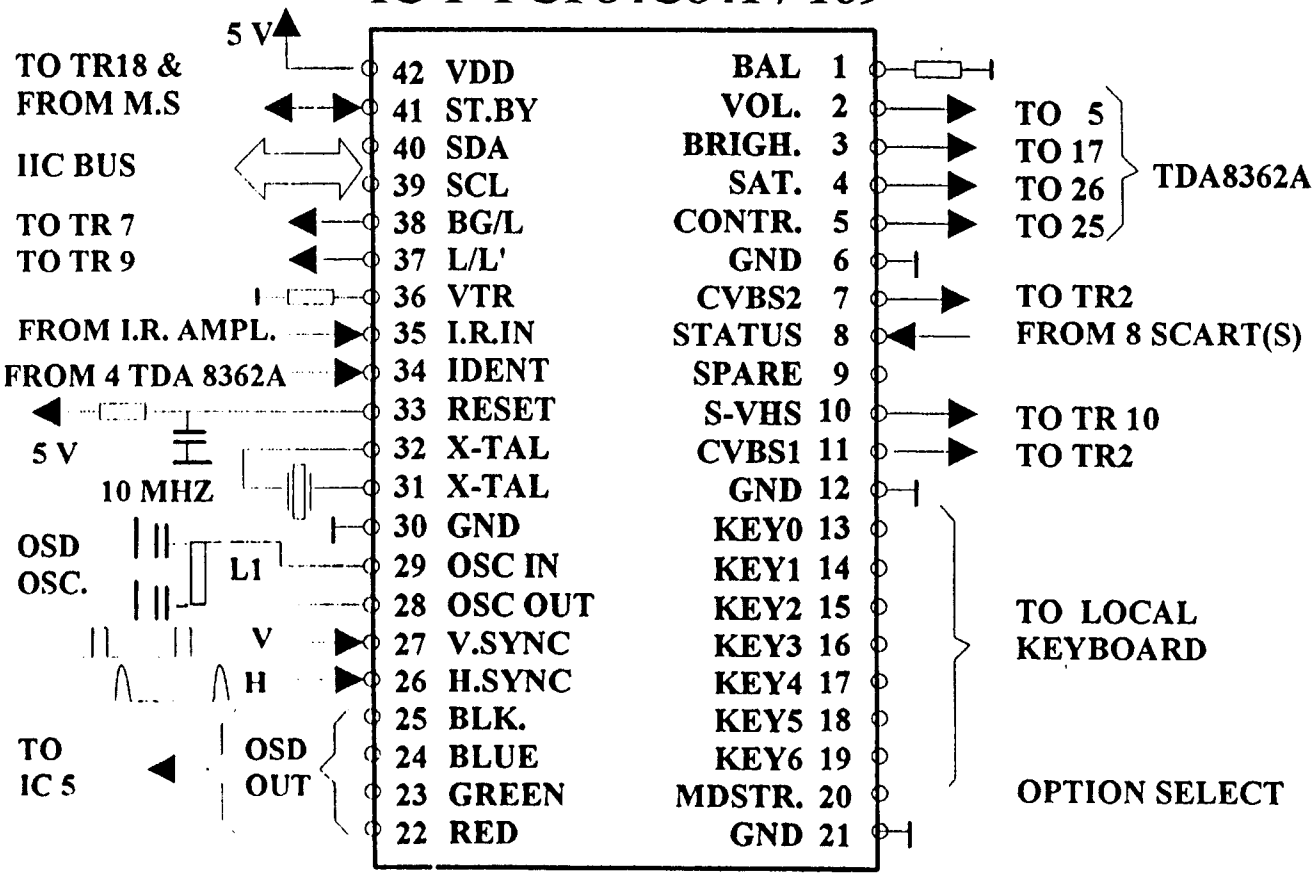


Functional description.

Integrated circuit TDA 4601 is a swich-mode power controller that is particularly suited to TV use. It is able to directly drive a bipolar current with a base current of 1.2 A. It is a controller complete with all functions for normal operation, for transient operation (ex. soft-start), and for malfunction operation (protection against overload and shot-circuits).

F 11 MICROCONTROLLER

IC 1 PCF84C841 / 169



8a

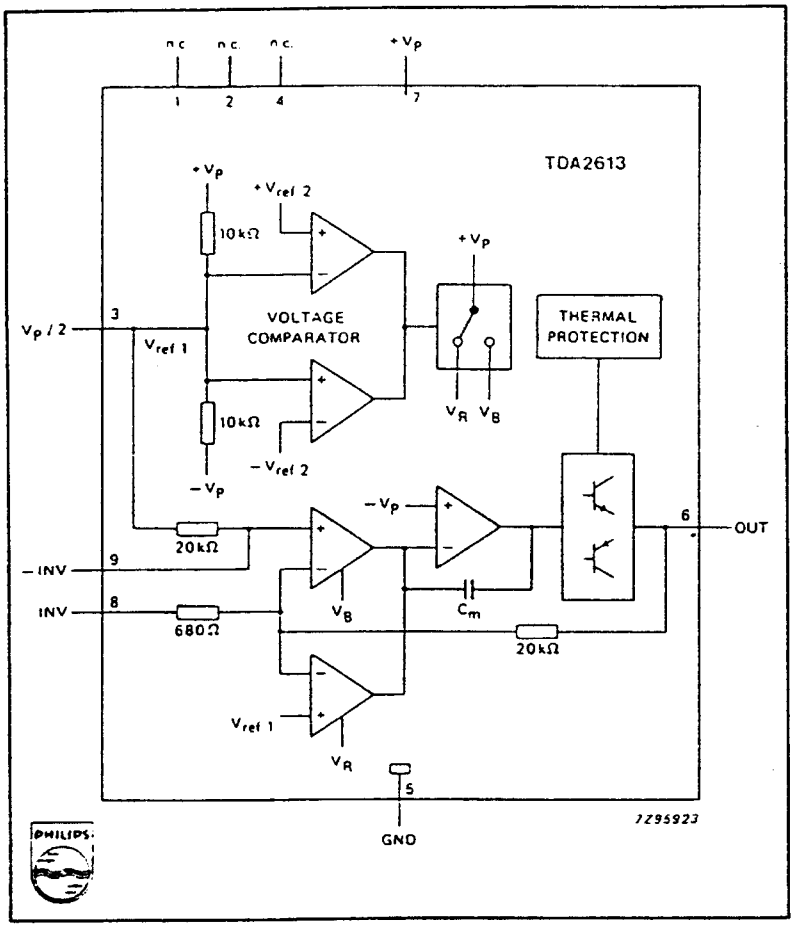
PCA 84C841/061 pinout description

1 output balance (not active for stereo BG and nicam)
2 volume output (only mono and stereo from scart- not active for stereo BG e nicam
3 brightness output
4 saturation output
5 contrast output (TRE-not active for stereo BG and nicam)
6 bass output (not active for stereo BG and nicam)
7 CVBS2
8 status
9 spare
10 S-VHS
11 CVBS1
12 RGB
13 input/output keyboard
14 input/output keyboard
15 input/output keyboard
16 input/output keyboard
17 input/output keyboard
18 input/output keyboard
19 input/output keyboard
20 strobe output
21 ground
22 OSD red output
23 OSD green output
24 OSD blue output
25 OSD fast blanking
26 horizontal synchro input
27 vertical sinchro input
28 OSD LC oscillator
29 OSD LC oscillator
30 ground
31 xtal 10 MHz oscillator input
32 oscillator output
33 reset
34 identification input
35 IR input
36 n.c.
37 L/L' or dual
38 BG/L or stereo
39 SCL i2cbus
40 SDA i2cbus
41 stand-by
42 power supply

Functional description

CTV 322S tuning is a control system for television based on micro-controller PCA84C841/061. It is a frequency synthesiser system with O.S.D. (On-screen-display), sound and colour are controlled by 5 digital/analog converters.

N.B. For stereo BG and nicam TVC, volume, balance, treble and bass controls are handled in digital level in i2cbus.



PINNING TDA 2613

1- not connect
2- not connect
3- 1/2 tension
4- not connect
5- ground
6- output
7- power supply
8- inverting input
9- non-inverting input

Functional description

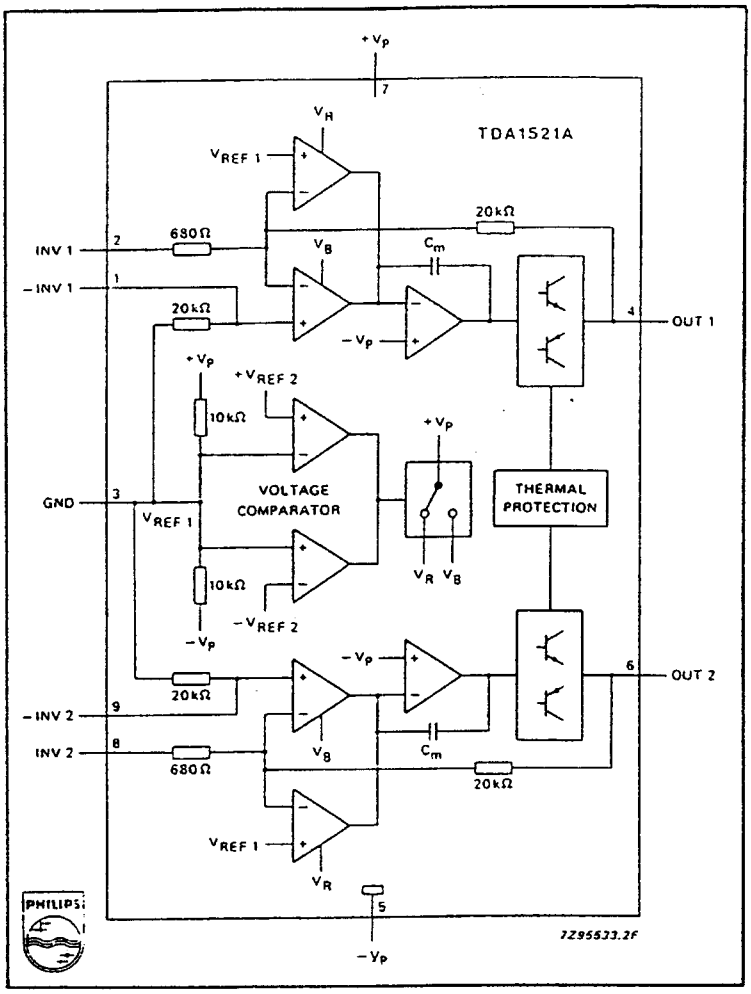
TDA 2613 is a monophonic output amplifier. It requires no external component. It drives 16 Ohm speakers Gain is set internally at 30 dB.

PCA 84C841/169 pinout description

1 output balance (not active for mono, stereo BG and nicam)
2 volume output (only mono and stereo from scart- not active for stereo BG e nicam)
3 brightness output
4 saturation output
5 contrast output (TRE-not active for mono, stereo BG and nicam)
6 bass output (not active for mono, stereo BG and nicam)
7 CVBS2
8 status
9 spare
10 S-VHS
11 CVBS1
12 RGB
13 input/output keyboard
14 input/output keyboard
15 input/output keyboard
16 input/output keyboard
17 input/output keyboard
18 input/output keyboard
19 input/output keyboard
20 strobe output
21 ground
22 OSD red output
23 OSD green output
24 OSD blue output
25 OSD fast blanking
26 horizontal synchro input
27 vertical sinchro input
28 OSD LC oscillator
29 OSD LC oscillator
30 ground
31 xtal 10 MHz oscillator input
32 oscillator output
33 reset
34 identification input
35 IR input
36 VTR
37 L/L'
38 BG/L or stereo
39 SCL i2cbus
40 SDA i2cbus
41 stand-by
42 power supply

N.B. For stereo BG and nicam TVC, volume, balance, treble and bass controls are handled in digital level in i2cbus.

AUDIO 2x6 W - TDA 1521A

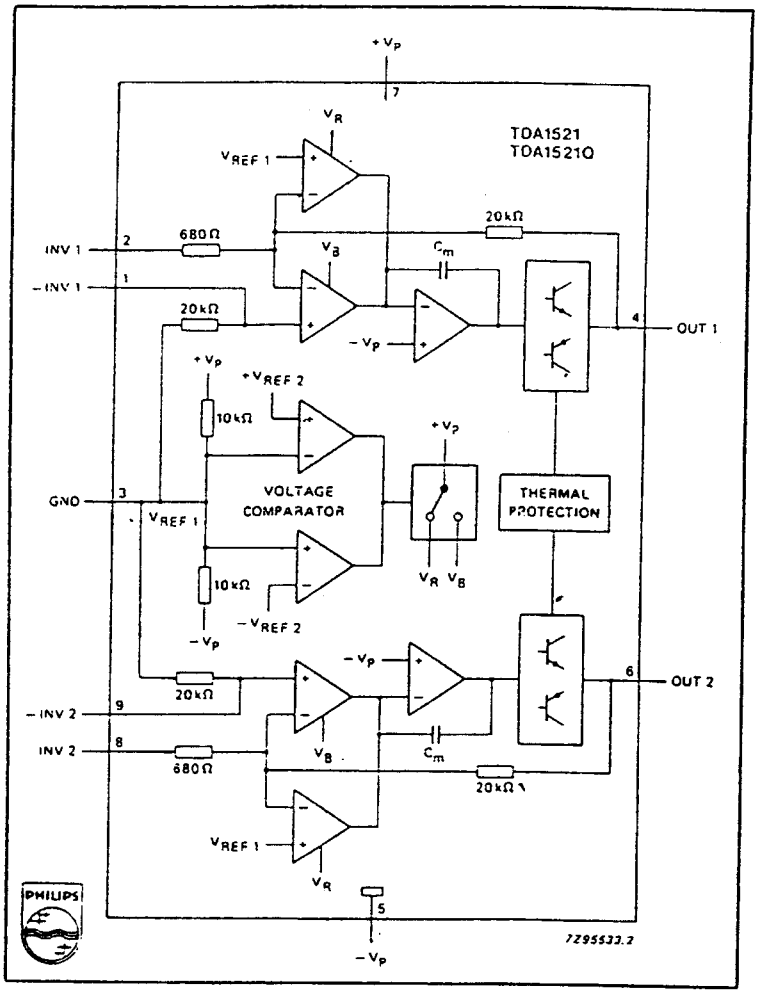


PINNING TDA 1521A

1- non-inverting input 1
2- inverting input 1
3- ground or 1/2 power supply
4- output 1
5- ground or negative supply
6- output 2
7- power supply
8- inverting input 2
9- non-inverting input 2

Functional description

TDA 1521A is a stereophonic 2x6 W audio output amplifier. Gain is set internally at 30dB

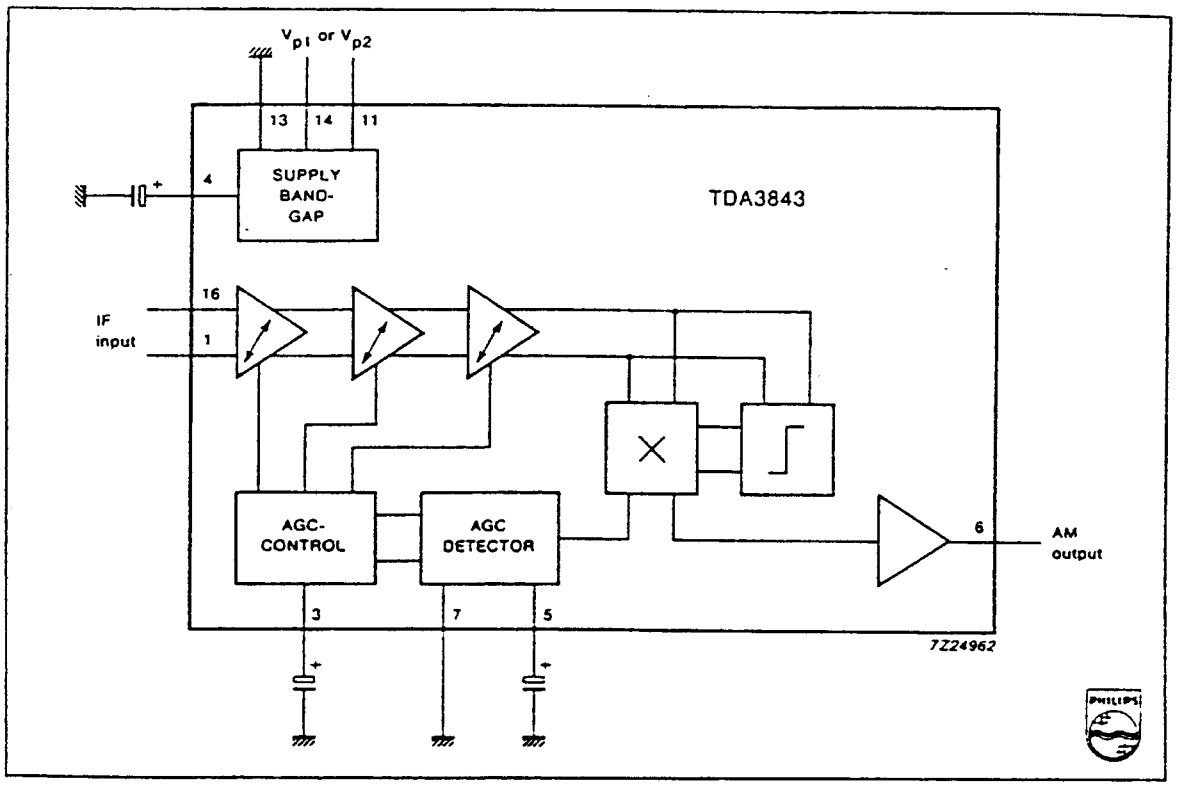


PINNING TDA 1521

1- non-inverting input 1
2- inverting input 1
3- ground or 1/2 power supply
4- output 1
5- ground or negative supply
6- output 2
7- power supply
8- inverting input 2
9- non-inverting input 2

Functional description

TDA 1521 is a stereophonic 2x12W audio output amplifier. Gain is set internally at 30dB.

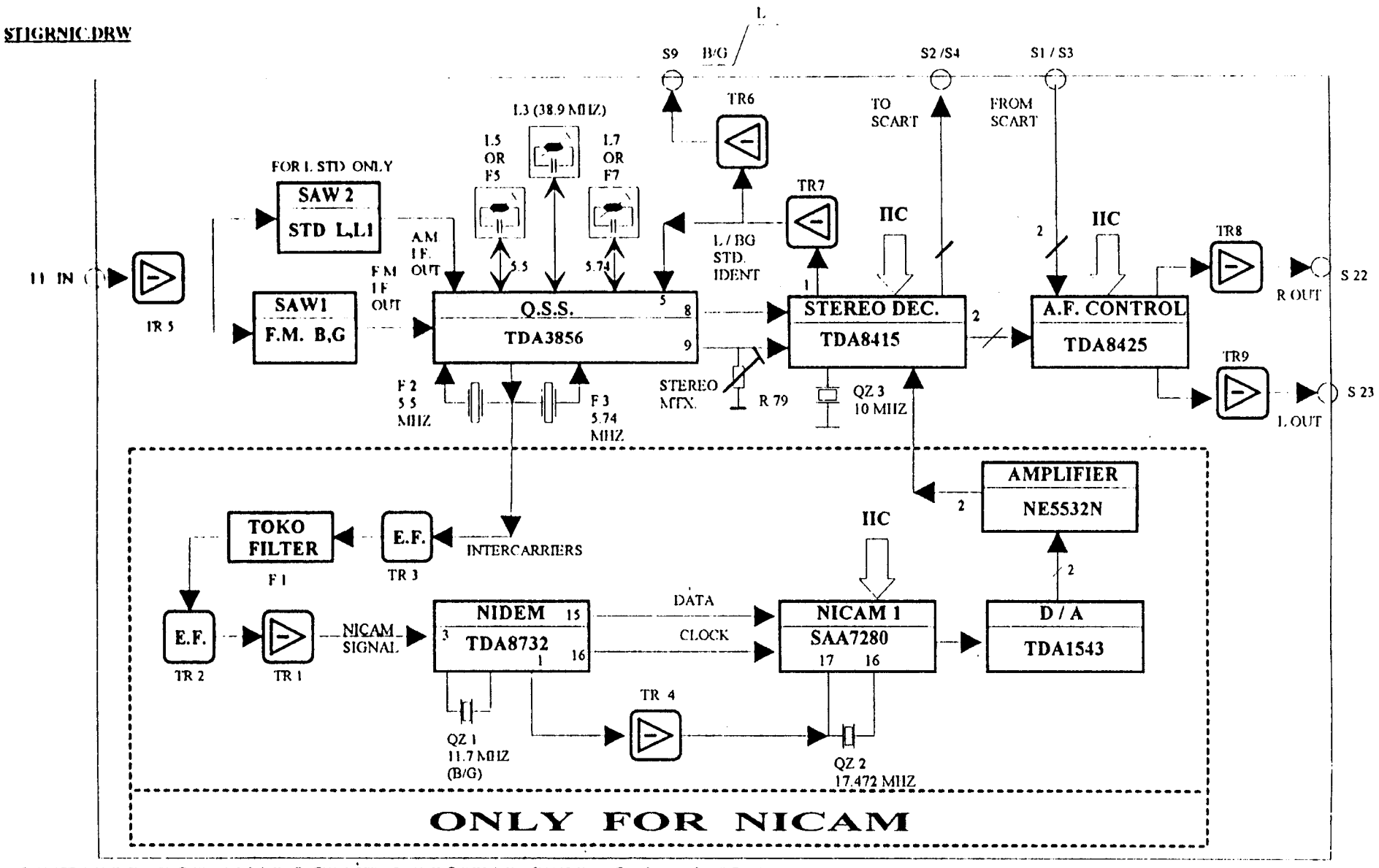


Functional description

TDA 3843 handles AM sound demodulation for standard L and L'.

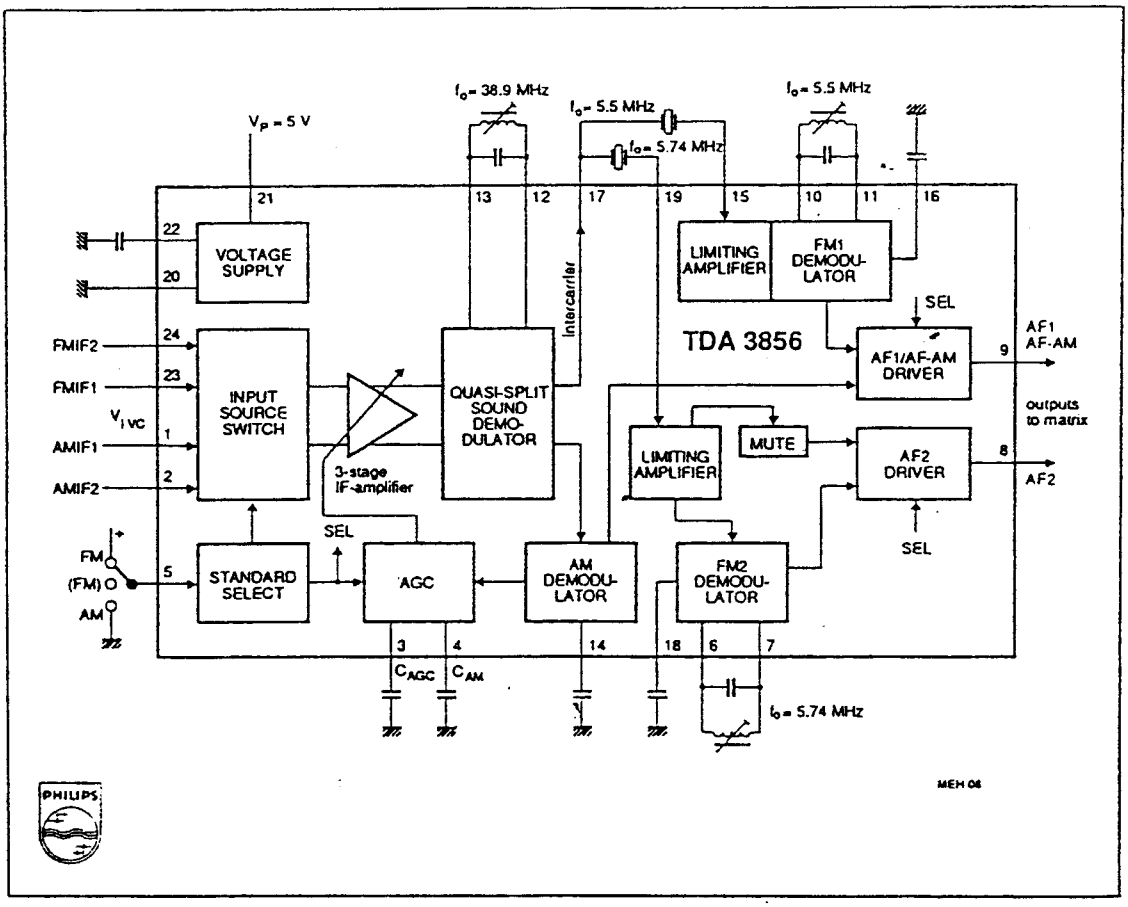
F 11 AUDIO MODULE BLOCK DIAGRAM

STIGRNIC DRW

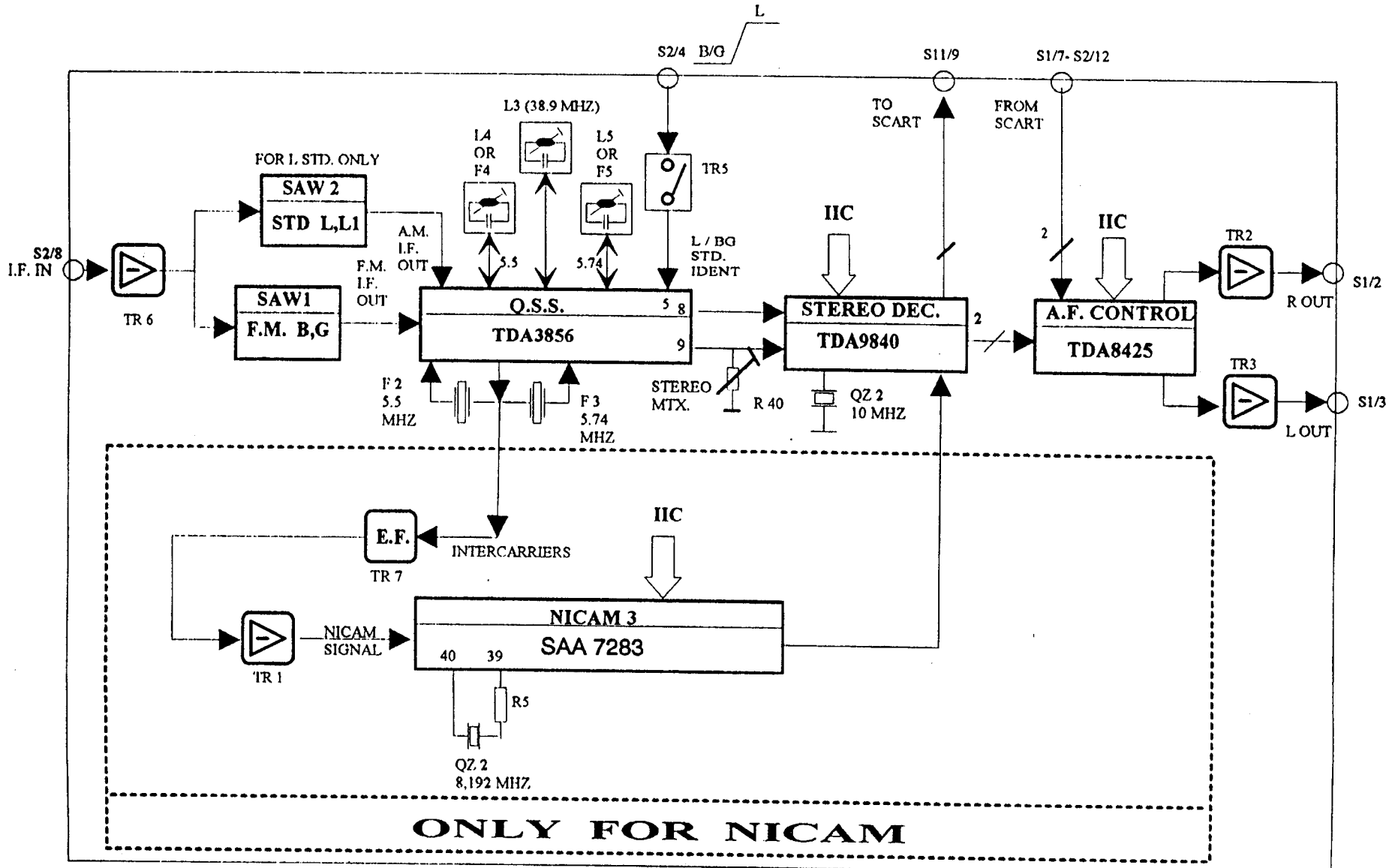


SUITABLE FOR ANALOGLUE & DIGITAL STEREO & MONO A.M..

STEREO DECODER

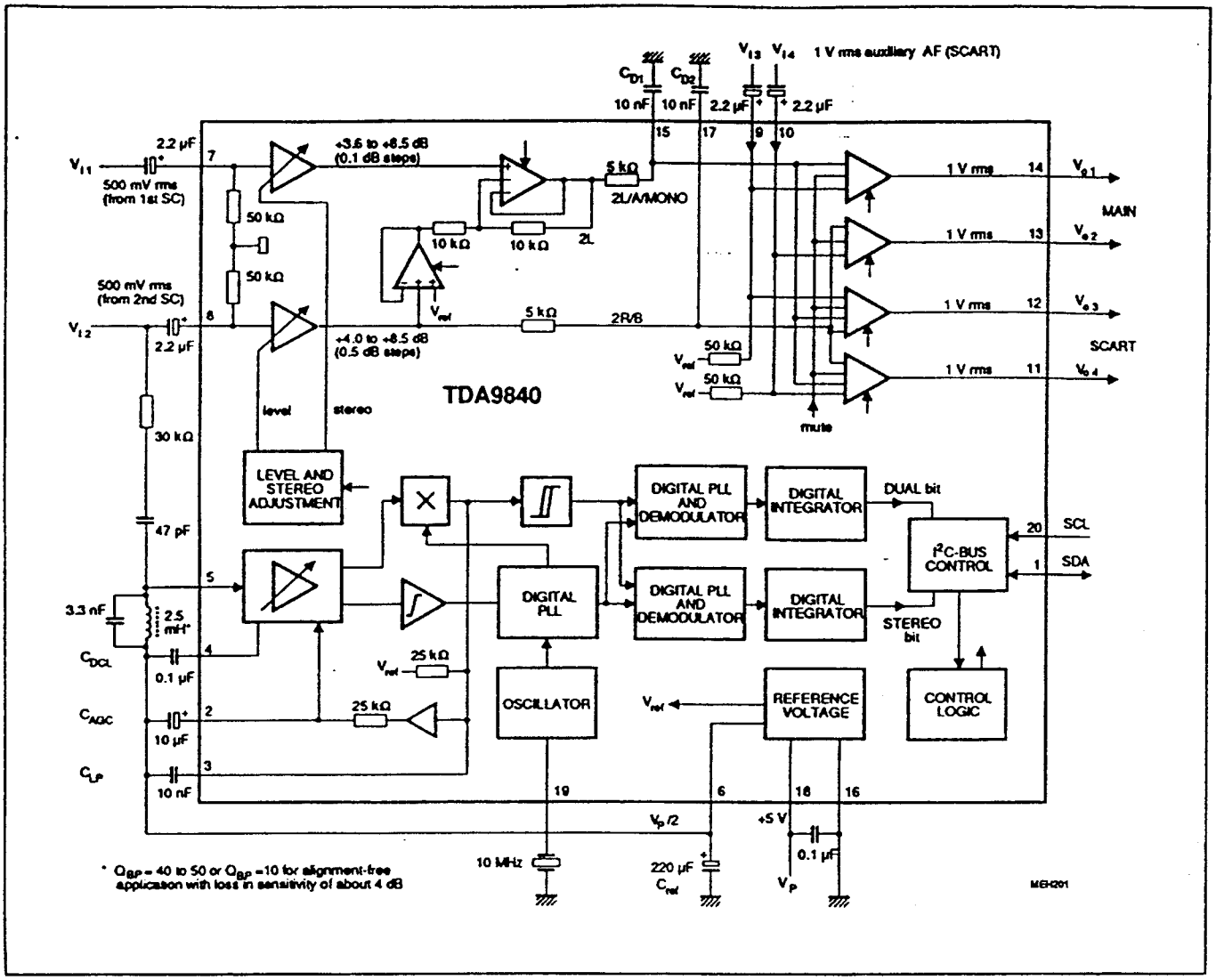


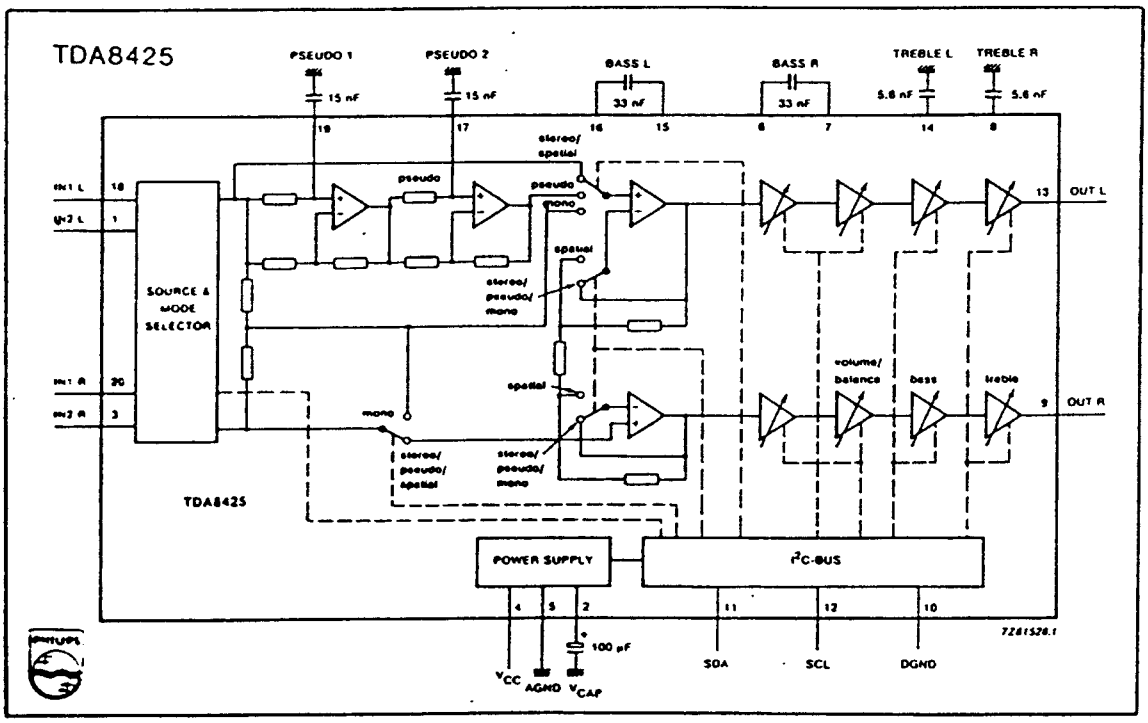
F 11 AUDIO MODULE BLOCK DIAGRAM

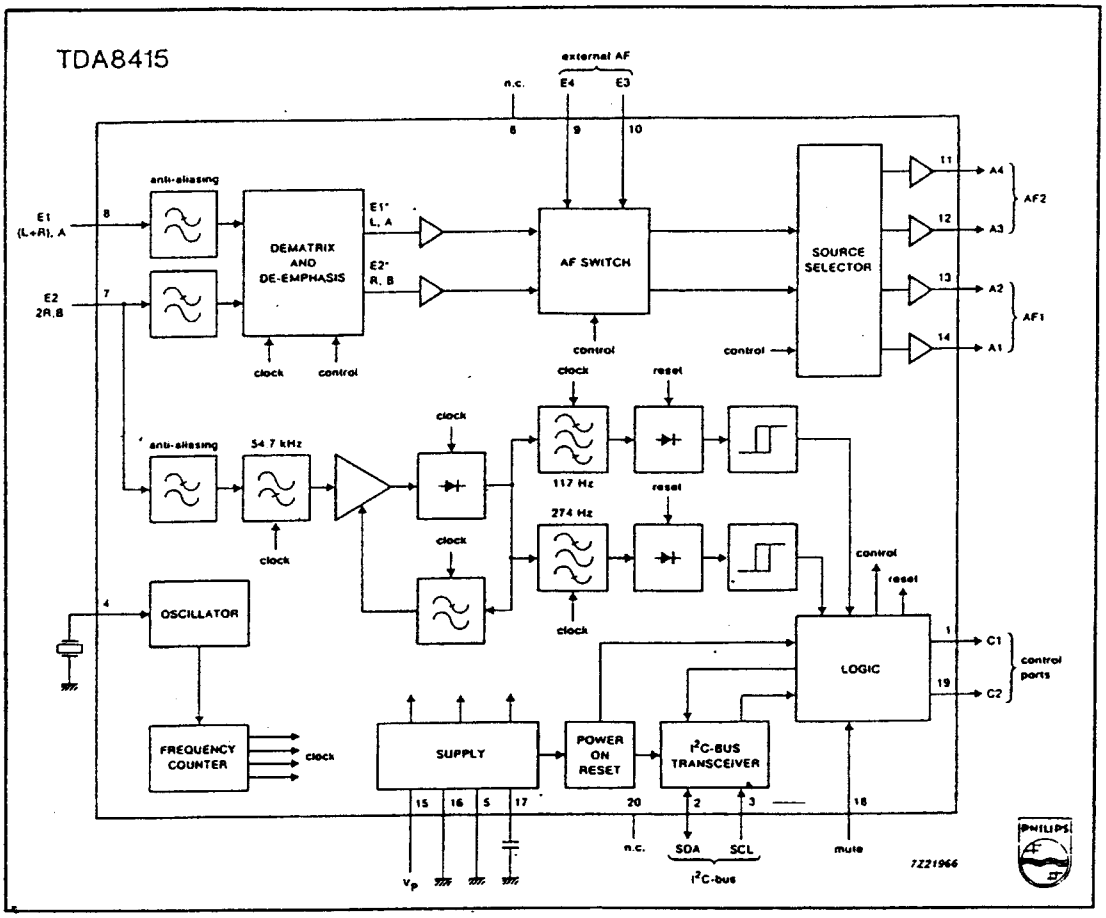


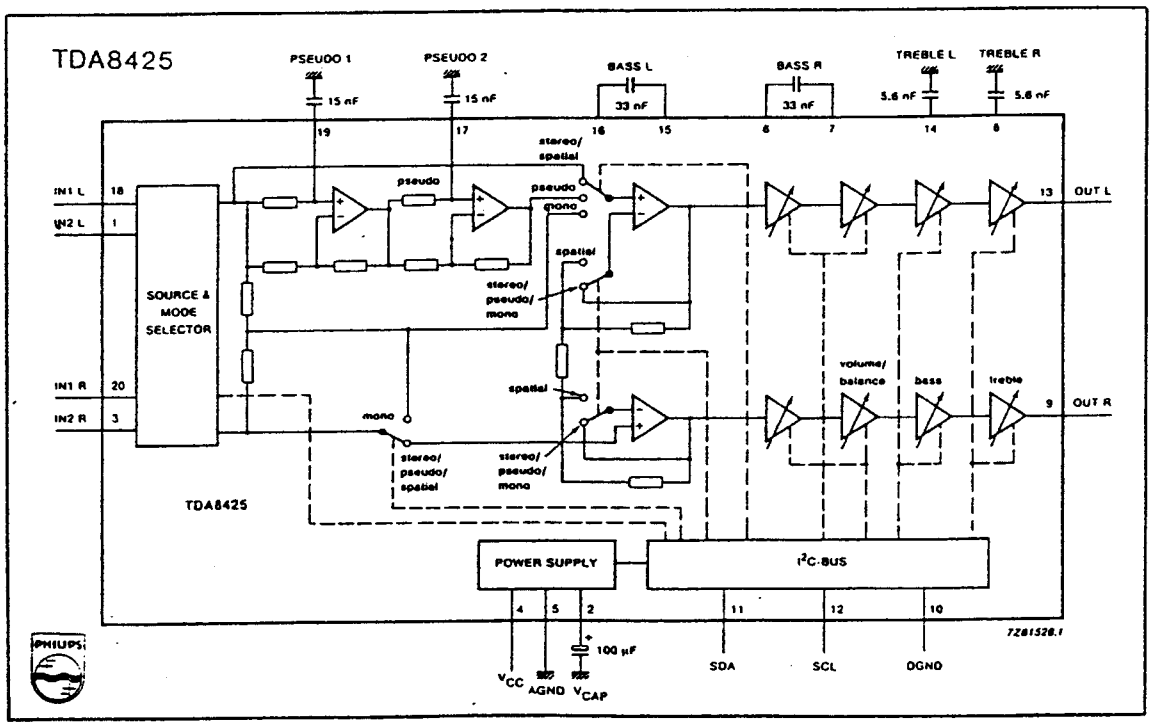
SUITABLE FOR ANALOGLUE & DIGITAL STEREO & MONO A.M.

13a

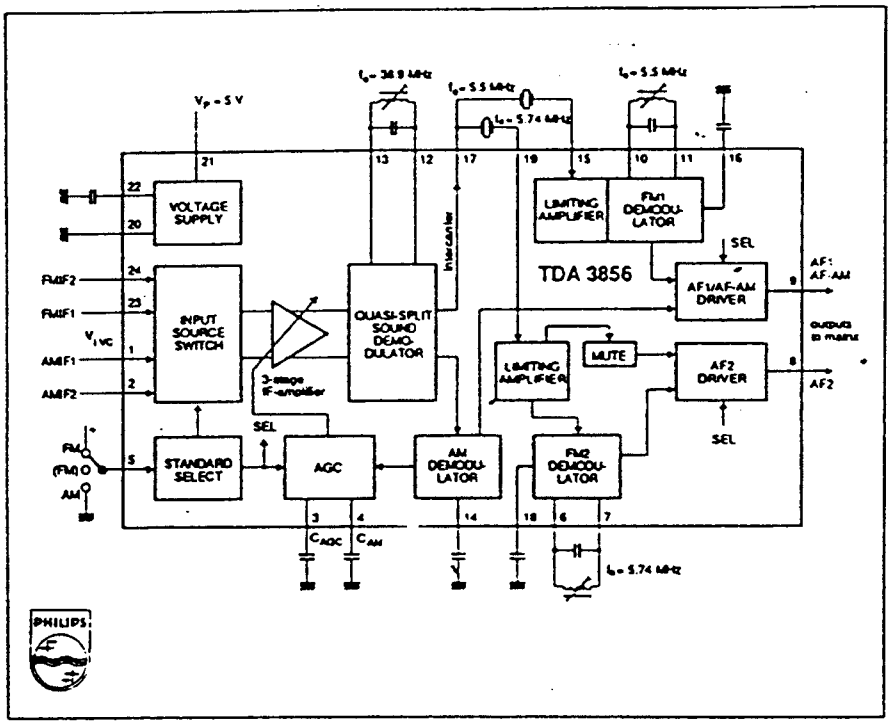

TDA9840
1 V rms auxiliary AF (SCART)
500 mV rms (from 1st SC)
500 mV rms (from 2nd SC)
+3.6 to +8.5 dB (0.1 dB steps)
+4.0 to +8.5 dB (0.5 dB steps)
2L/A/MONO
2R/B
MAIN
SCART
mute
level
stereo
LEVEL AND STEREO ADJUSTMENT
DIGITAL PLL AND DEMODULATOR
DIGITAL INTEGRATOR
DUAL bit
STEREO bit
I²C-BUS CONTROL
SCL
SDA
DIGITAL PLL
OSCILLATOR
REFERENCE VOLTAGE
CONTROL LOGIC
10 MHz
* Q_{BP} = 40 to 50 or Q_{BP} = 10 for alignment-free application with loss in sensitivity of about 4 dB
MEH201

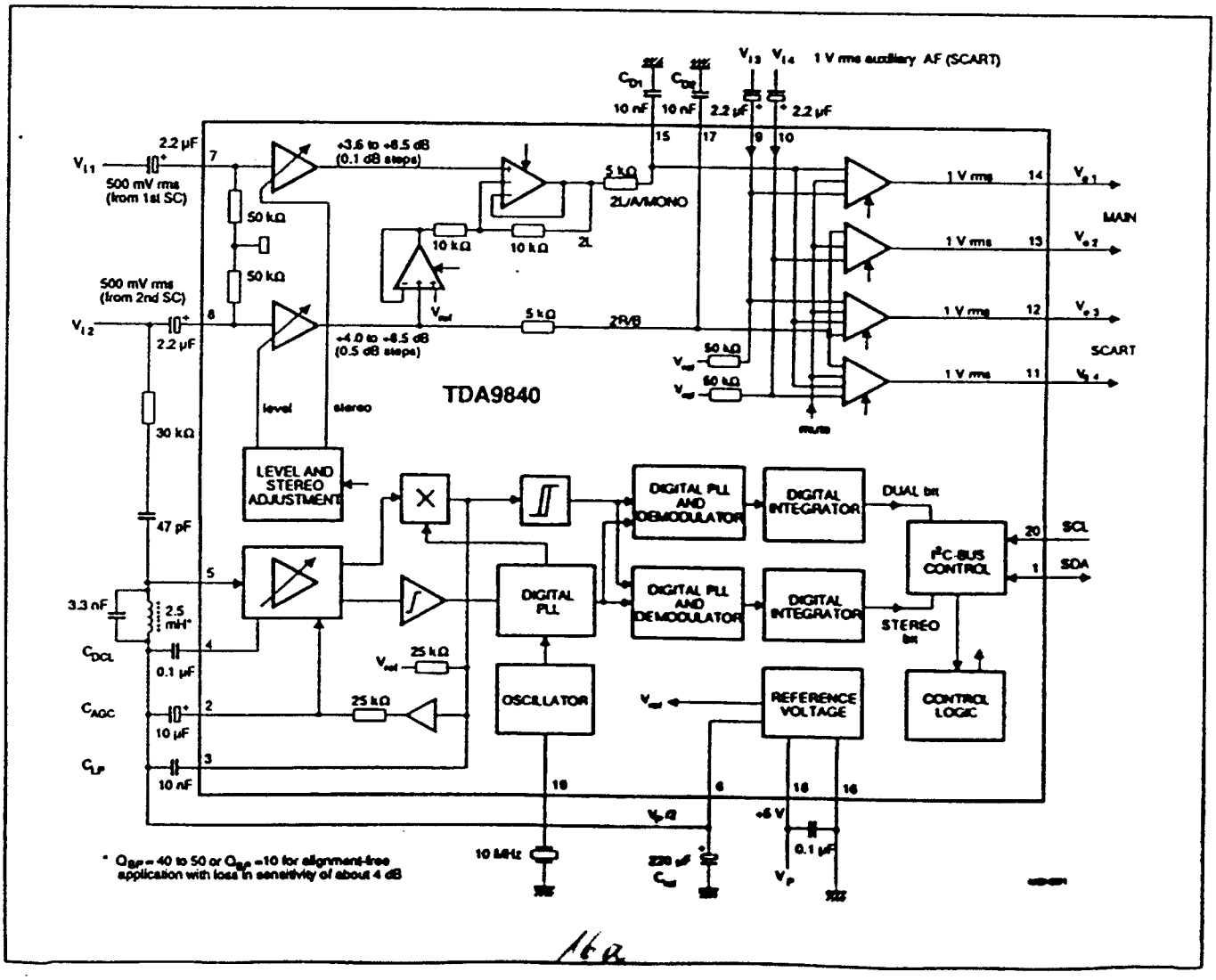

TDA8425
PSEUDO 1
PSEUDO 2
BASS L
BASS R
TREBLE L
TREBLE R
SOURCE & MODE SELECTOR
stereo/ spatial
pseudo
mono
spatial
stereo/ pseudo/ mono
volume/ balance
bass
treble
OUT L
OUT R
POWER SUPPLY
I²C-BUS
SDA
SCL
DGND
AGND
7Z81528.1


TDA8415
external AF
n.c.
E4
E3
anti-aliasing
E1
(L+R), A
E2
2R, B
DEMATRIX AND DE-EMPHASIS
E1*
L, A
E2*
R, B
AF SWITCH
SOURCE SELECTOR
A4
A3
A2
A1
AF2
AF1
clock
control
reset
54.7 kHz
117 Hz
274 Hz
OSCILLATOR
FREQUENCY COUNTER
SUPPLY
POWER ON RESET
I²C-BUS TRANSCEIVER
LOGIC
C1
C2
control ports
SDA
SCL
I²C-bus
mute
7Z21966

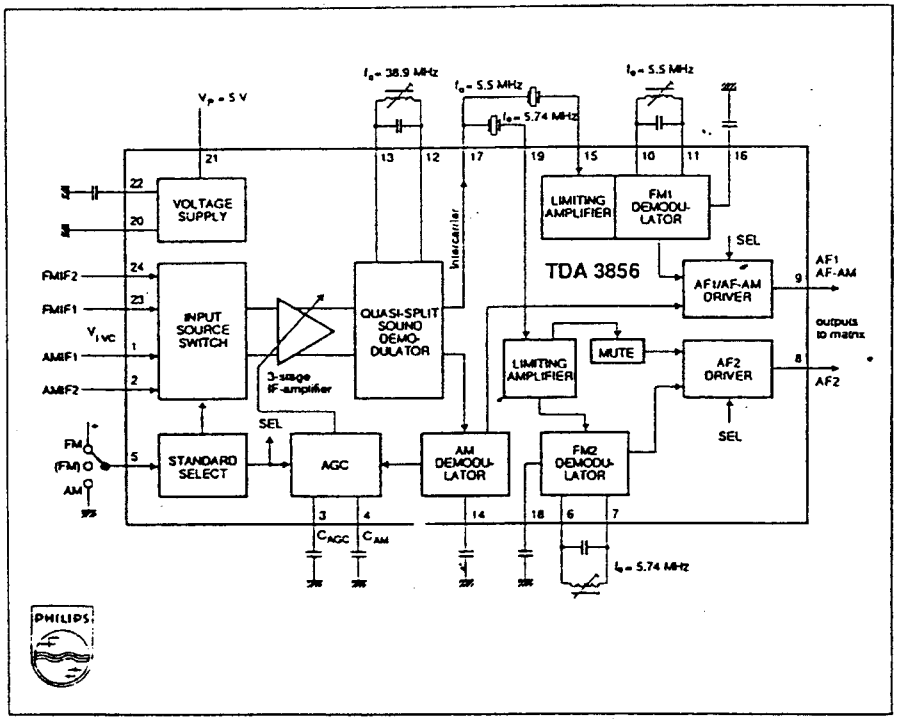

TDA8425
PSEUDO 1
PSEUDO 2
BASS L
BASS R
TREBLE L
TREBLE R
15 nF
33 nF
5.6 nF
IN1 L
IN2 L
IN1 R
IN2 R
SOURCE & MODE SELECTOR
stereo/ spatial
pseudo
mono
spatial
stereo/ pseudo/ mono
stereo/ pseudo/ spatial
volume/ balance
bass
treble
OUT L
OUT R
TDA8425
POWER SUPPLY
I²C-BUS
100 µF
VCC
AGND
VCAP
SDA
SCL
OGND
7Z81528.1

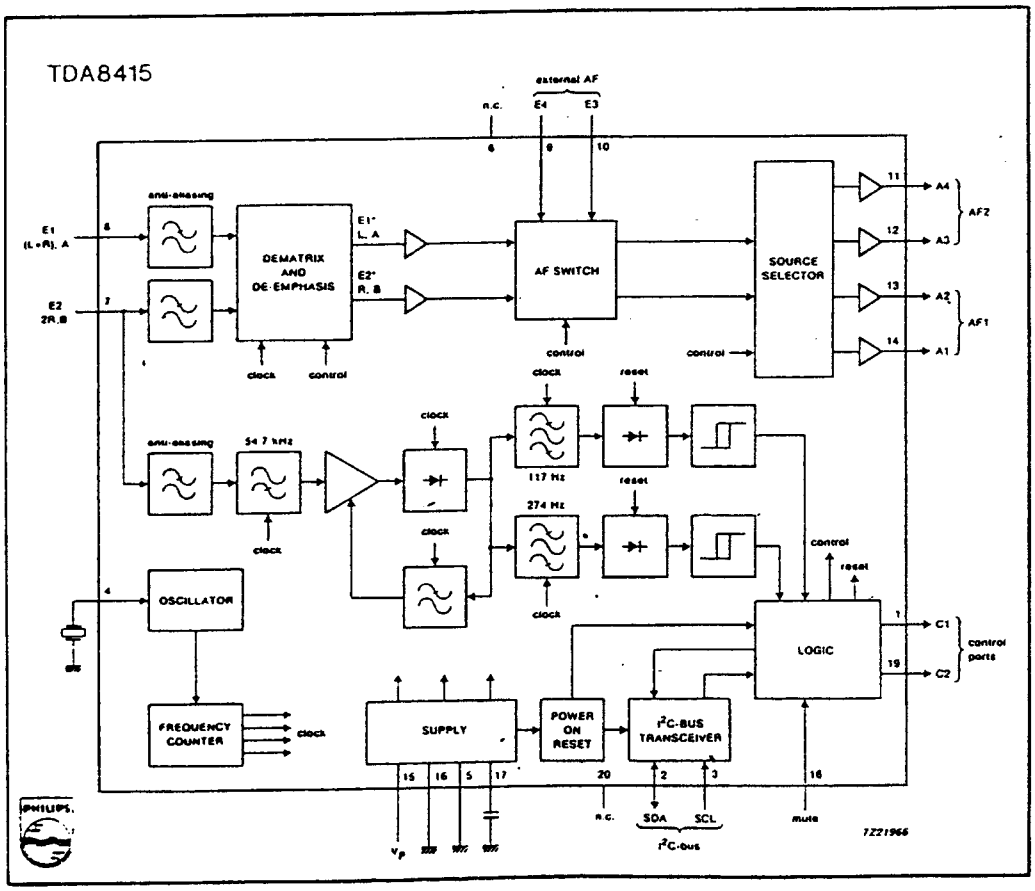
STEREO DECODER - NICAM 3

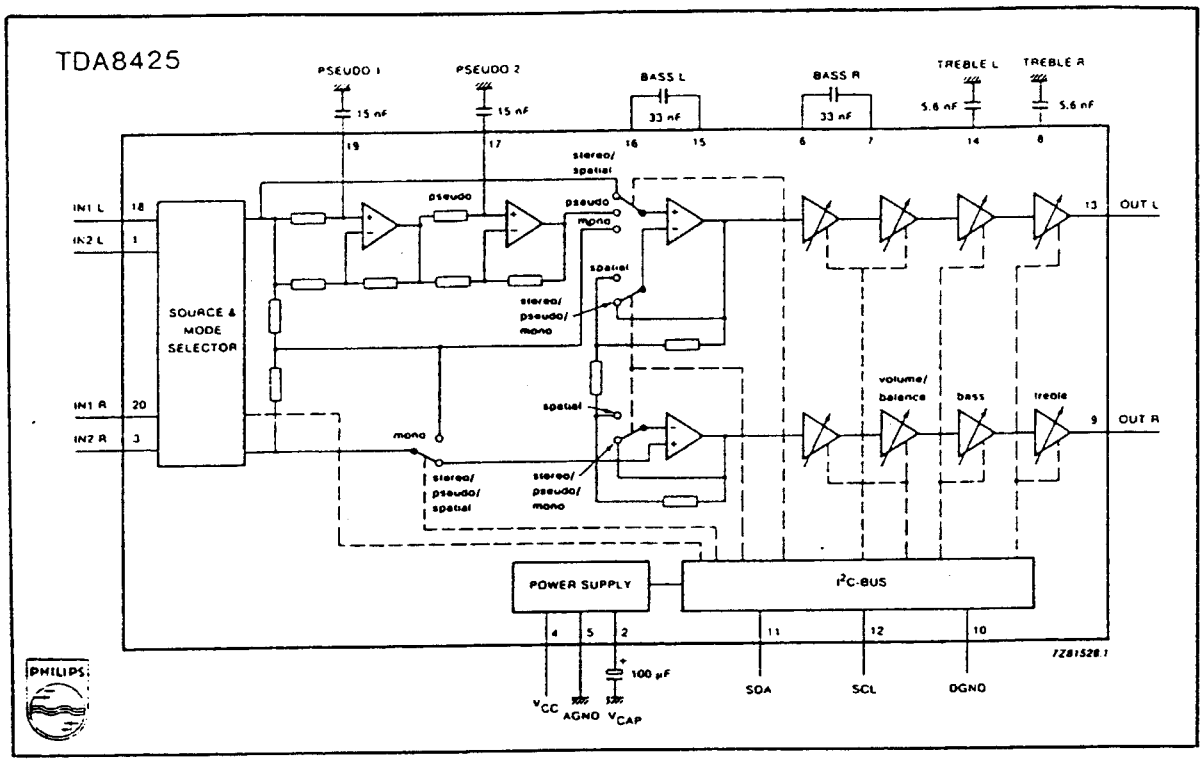


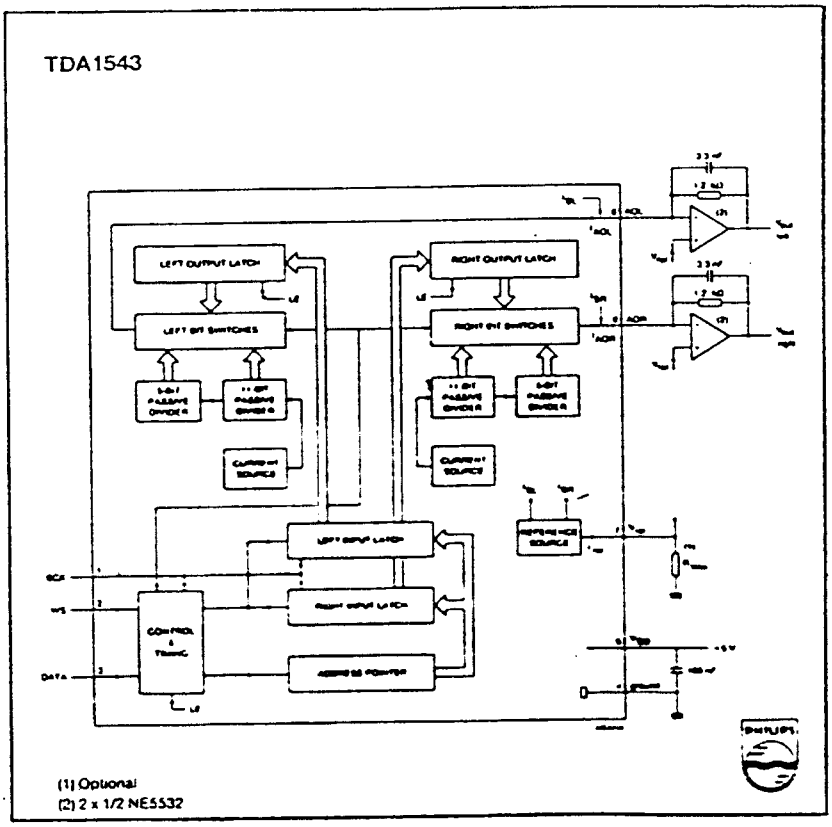


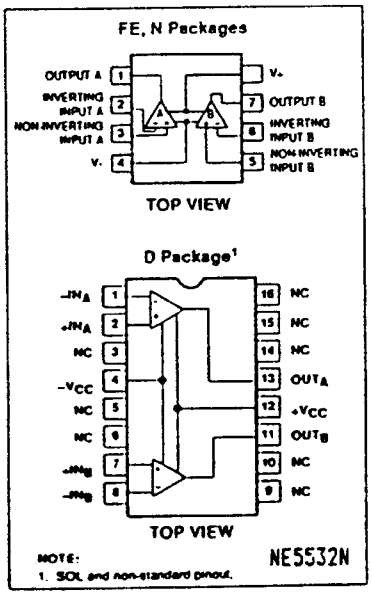
STEREO NICAM DECODER



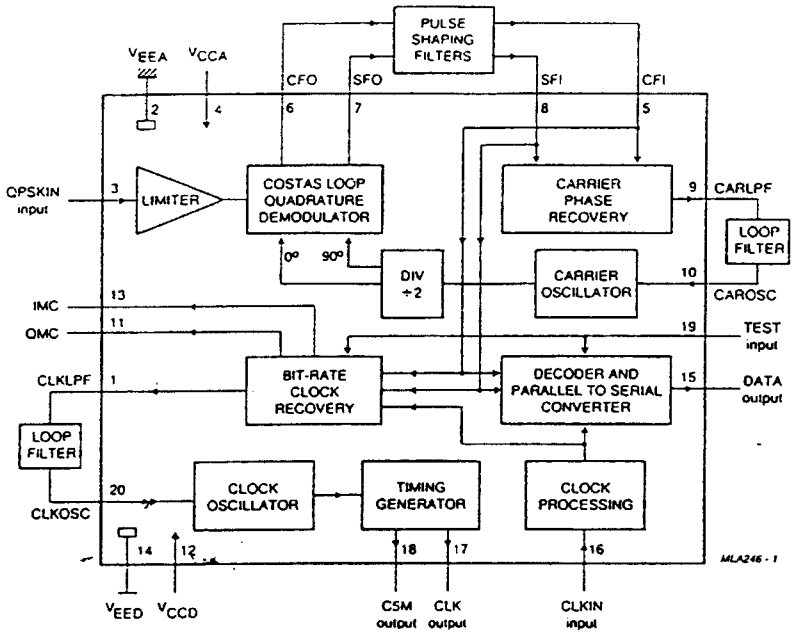


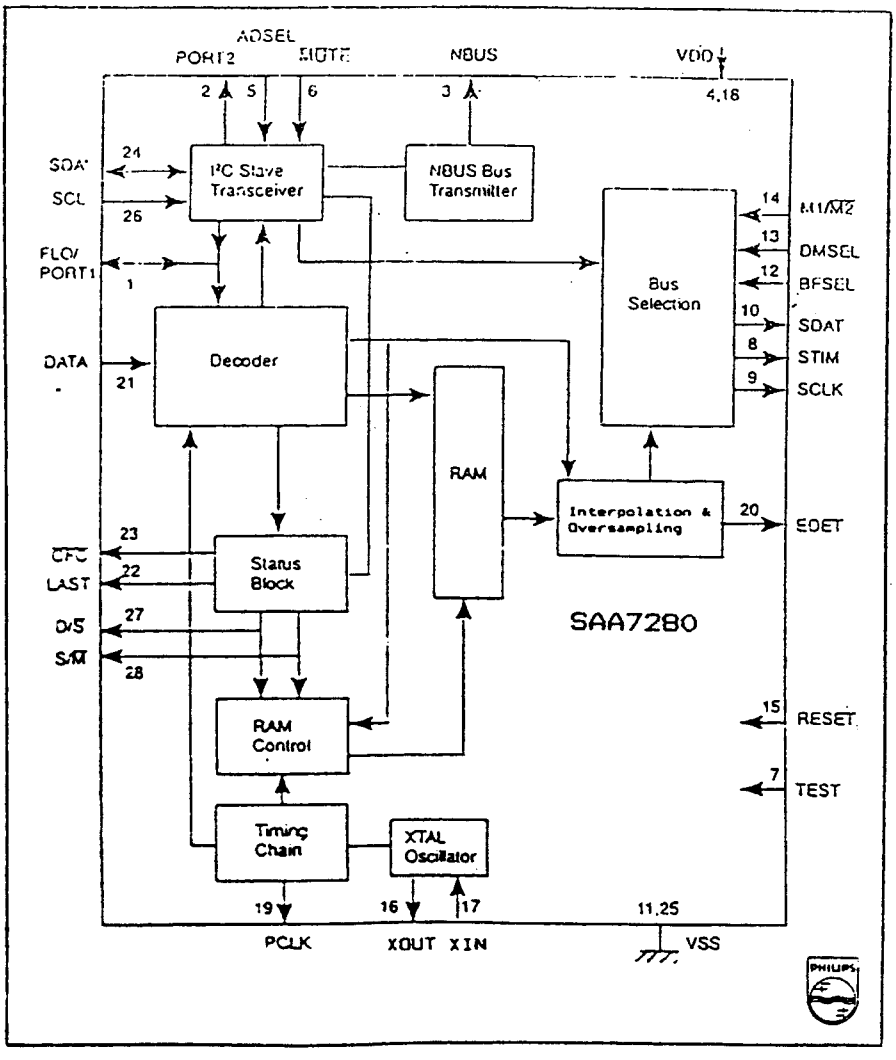

TDA8425
PSEUDO 1
PSEUDO 2
BASS L
BASS R
TREBLE L
TREBLE R
15 nF
15 nF
33 nF
33 nF
5.6 nF
5.6 nF
IN1 L
IN2 L
IN1 R
IN2 R
SOURCE & MODE SELECTOR
pseudo
stereo/ spatial
mono
spatial
stereo/ pseudo/ mono
volume/ balance
bass
treble
OUT L
OUT R
POWER SUPPLY
I²C-BUS
100 µF
SDA
SCL
DGND
VCC
AGND
VCAP

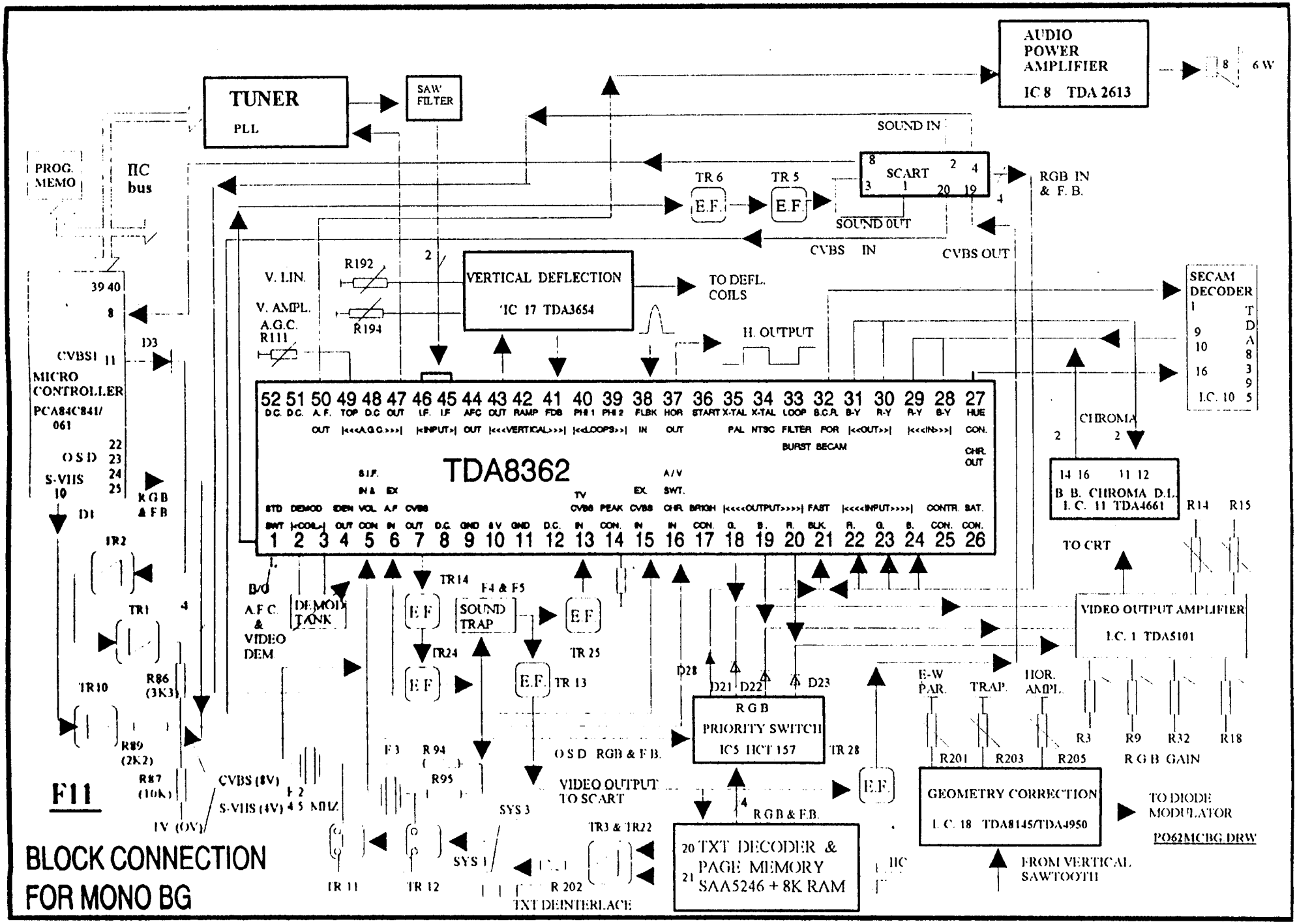

TDA1543
LEFT OUTPUT LATCH
RIGHT OUTPUT LATCH
CONTROL & TIMING
(1) Optional
(2) 2 x 1/2 NE5532


FE, N Packages
OUTPUT A
INVERTING INPUT A
NON-INVERTING INPUT A
V-
V+
OUTPUT B
INVERTING INPUT B
NON-INVERTING INPUT B
TOP VIEW
D Package¹
-INA
+INA
NC
-VCC
NC
NC
+INB
-INB
OUTA
+VCC
OUTB
TOP VIEW
NOTE:
1. SOL and non-standard pinout.
NE5532N

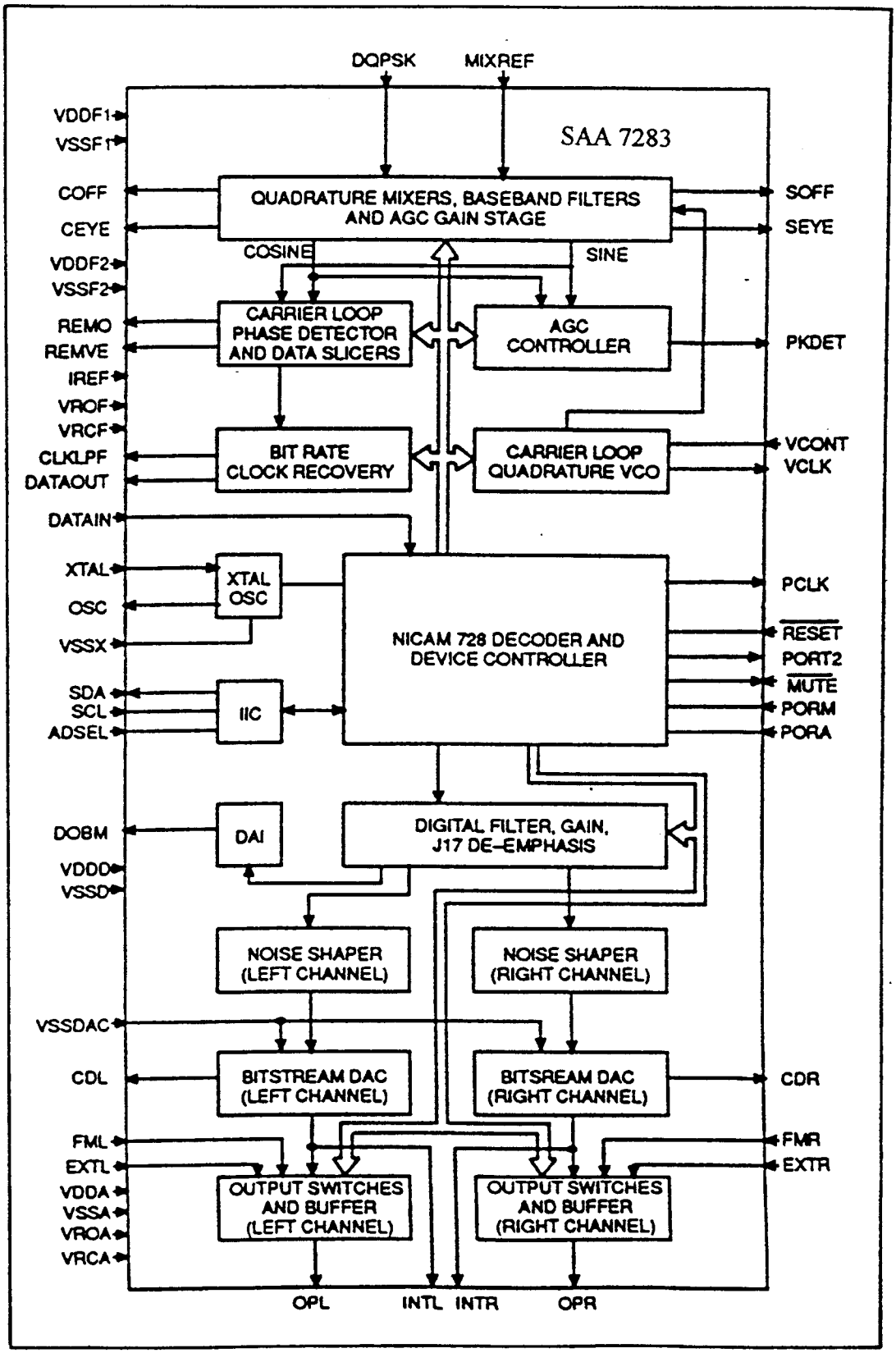
TDA8732

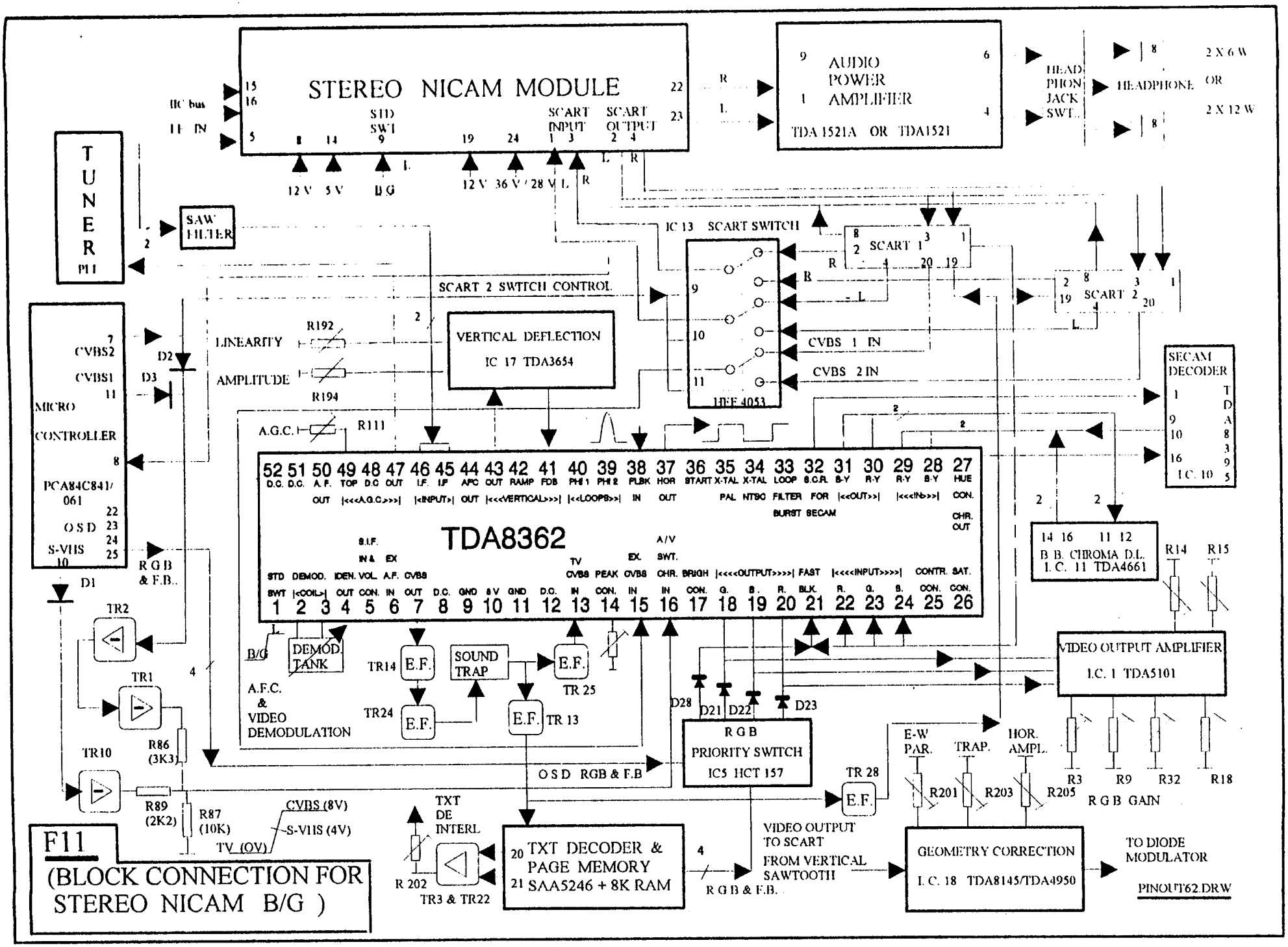

PULSE SHAPING FILTERS
VEEA
VCCA
CFO
SFO
SFI
CFI
QPSKIN input
LIMITER
COSTAS LOOP QUADRATURE DEMODULATOR
CARRIER PHASE RECOVERY
CARLPF
LOOP FILTER
0°
90°
DIV ÷2
CARRIER OSCILLATOR
CAROSC
IMC
OMC
TEST input
CLKLPF
BIT-RATE CLOCK RECOVERY
DECODER AND PARALLEL TO SERIAL CONVERTER
DATA output
LOOP FILTER
CLKOSC
CLOCK OSCILLATOR
TIMING GENERATOR
CLOCK PROCESSING
MLA246 - 1
VEED
VCCD
CSM output
CLK output
CLKIN input

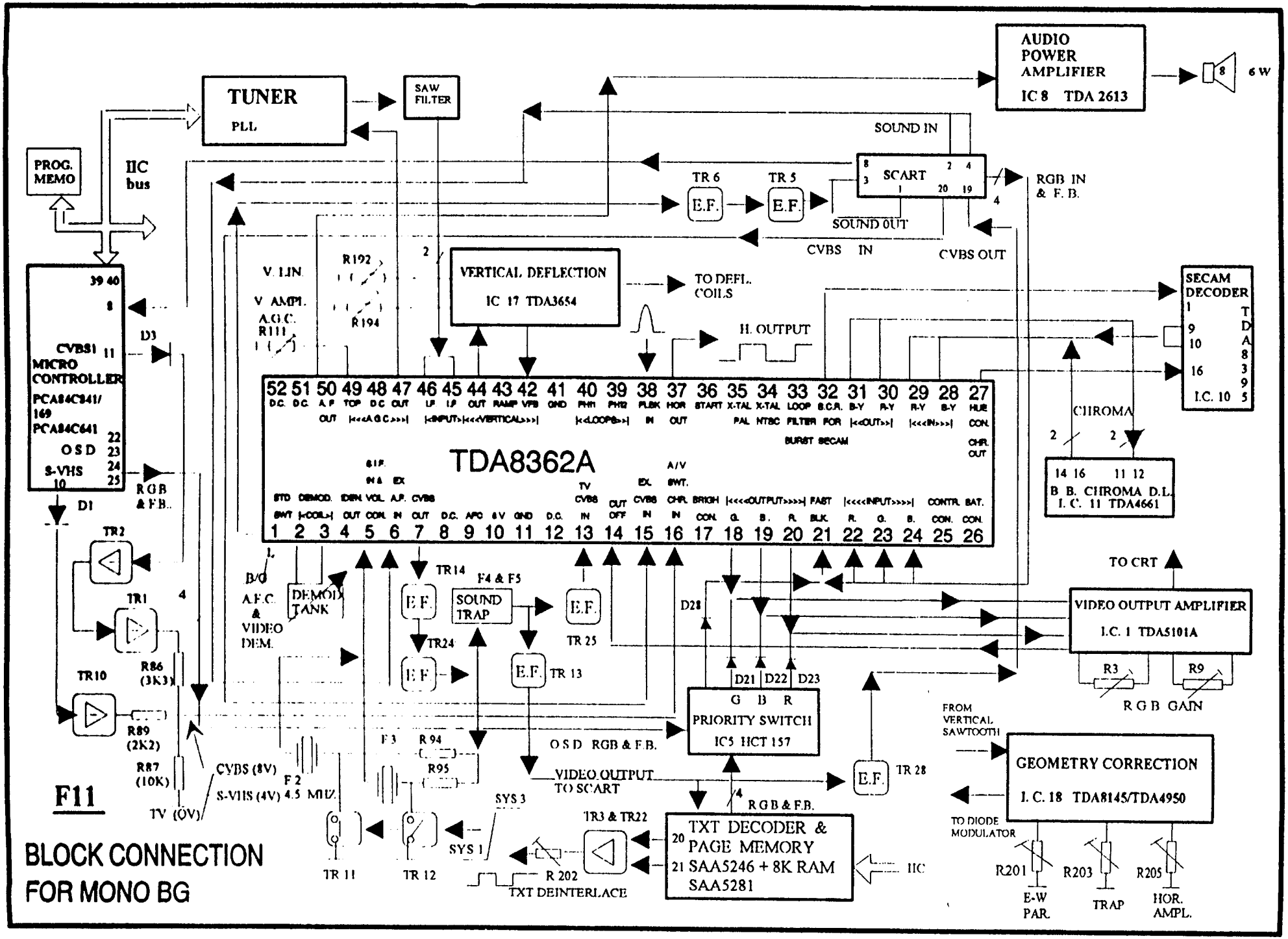

ADSEL
PORT2
SIOTE
NBUS
VDD
SDA
SCL
I²C Slave Transceiver
NBUS Bus Transmitter
FLOV PORT1
DATA
Decoder
Bus Selection
M1/M2
DMSEL
BFSEL
SDAT
STIM
SCLK
RAM
Interpolation & Oversampling
EOET
CFC
LAST
Status Block
D/S
S/M
SAA7280
RAM Control
RESET
TEST
Timing Chain
XTAL Oscillator
PCLK
XOUT
XIN
VSS
PHILIPS

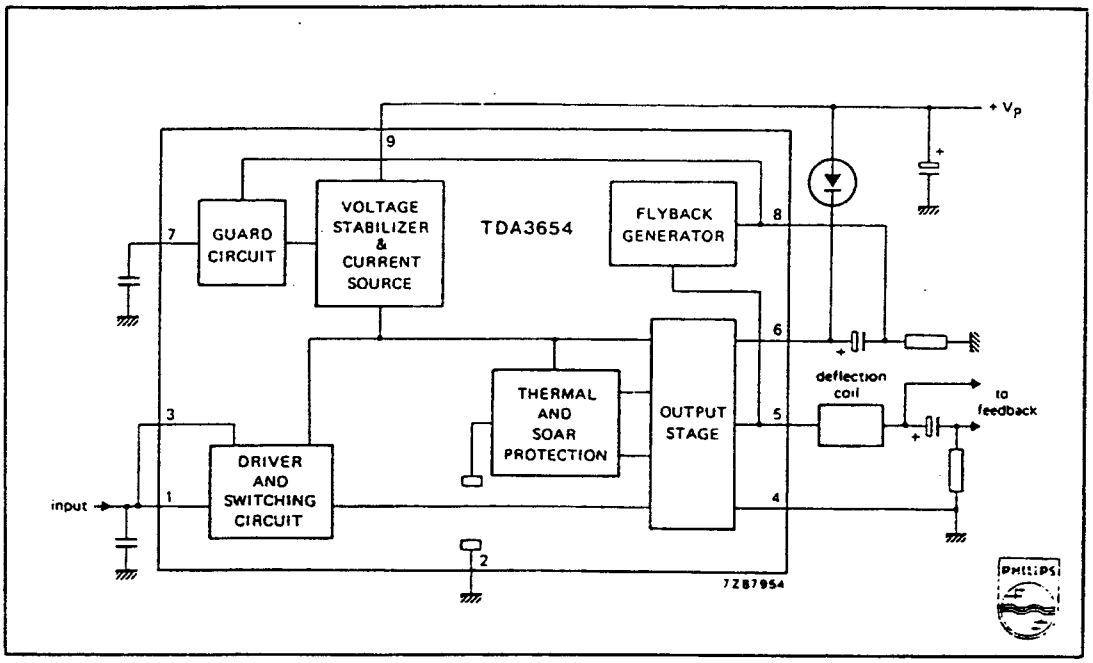


BLOCK CONNECTION FOR MONO BG


SAA 7283
DQPSK
MIXREF
VDDF1
VSSF1
COFF
CEYE
VDDF2
VSSF2
REMO
REMVE
IREF
VROF
VRCF
CLKLPF
DATAOUT
DATAIN
XTAL
OSC
VSSX
SDA
SCL
ADSEL
DOBM
VDDD
VSSD
VSSDAC
CDL
FML
EXTL
VDDA
VSSA
VROA
VRCA
QUADRATURE MIXERS, BASEBAND FILTERS AND AGC GAIN STAGE
COSINE
SINE
CARRIER LOOP PHASE DETECTOR AND DATA SLICERS
AGC CONTROLLER
BIT RATE CLOCK RECOVERY
CARRIER LOOP QUADRATURE VCO
XTAL OSC
NICAM 728 DECODER AND DEVICE CONTROLLER
IIC
DAI
DIGITAL FILTER, GAIN, J17 DE-EMPHASIS
NOISE SHAPER (LEFT CHANNEL)
NOISE SHAPER (RIGHT CHANNEL)
BITSTREAM DAC (LEFT CHANNEL)
BITSREAM DAC (RIGHT CHANNEL)
OUTPUT SWITCHES AND BUFFER (LEFT CHANNEL)
OUTPUT SWITCHES AND BUFFER (RIGHT CHANNEL)
SOFF
SEYE
PKDET
VCONT
VCLK
PCLK
RESET
PORT2
MUTE
PORM
PORA
CDR
FMR
EXTR
OPL
INTL
INTR
OPR

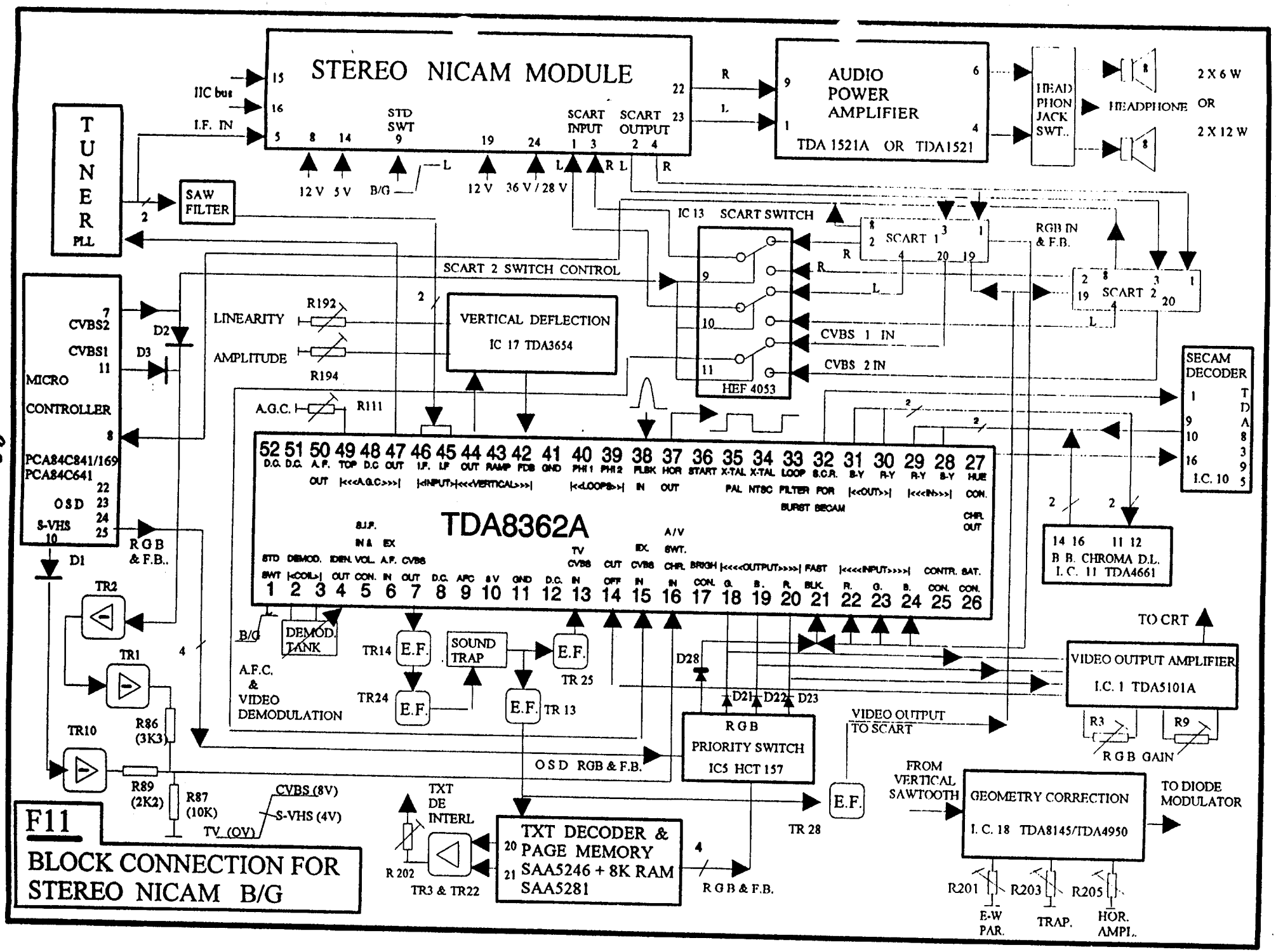

STEREO NICAM MODULE
IIC bus
IF IN
STD SWT
SCART INPUT
SCART OUTPUT
12 V
5 V
B/G
12 V
36 V / 28 V
L
R
AUDIO POWER AMPLIFIER
TDA 1521A OR TDA1521
HEAD PHON JACK SWT.
HEADPHONE
2 X 6 W
OR
2 X 12 W
TUNER
PI1
SAW FILTER
IC 13 SCART SWITCH
HEF 4053
SCART 1
SCART 2
SCART 2 SWTICH CONTROL
CVBS 1 IN
CVBS 2 IN
SECAM DECODER
I.C. 10 TDA3654
VERTICAL DEFLECTION
IC 17 TDA3654
LINEARITY
AMPLITUDE
R192
R194
R111
A.G.C.
D2
D3
D1
MICRO CONTROLLER
PCA84C841/061
CVBS2
CVBS1
OSD
S-VHS
R G B & F.B.
TDA8362
52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27
D.C. D.C. A.F. TOP D.C OUT I.F. I.F APC OUT RAMP FDB PHI 1 PHI 2 FLBK HOR START X-TAL X-TAL LOOP S.C.R. B-Y R-Y R-Y B-Y HUE
OUT IN OUT IN OUT PAL NTSC FILTER FOR BURST SECAM CON. CHR. OUT
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
STD DEMOD. IDEN. VOL. A.F. CVBS TV CVBS PEAK EX. CVBS CHR. BRIGH FAST CONTR. SAT.
SWT COIL OUT CON. IN OUT D.C. GND 8V GND D.C. IN CON. IN IN CON. G. B. R. BLK. R. G. B. CON. CON.
S.I.F. IN & EX
A/V SWT.
B B. CHROMA D.L. I.C. 11 TDA4661
DEMOD. TANK
A.F.C. & VIDEO DEMODULATION
B/G
TR14
TR24
E.F.
SOUND TRAP
TR 25
TR 13
TR1
TR2
TR10
R86 (3K3)
R89 (2K2)
R87 (10K)
TV (0V)
CVBS (8V)
S-VHS (4V)
OSD RGB & F.B
D28
D21
D22
D23
R G B PRIORITY SWITCH
IC5 HCT 157
TR 28
VIDEO OUTPUT AMPLIFIER
I.C. 1 TDA5101
E-W PAR.
TRAP.
HOR. AMPL.
R201
R203
R205
R3
R9
R32
R18
R G B GAIN
TXT DE INTERL
R 202
TR3 & TR22
20 TXT DECODER & PAGE MEMORY
21 SAA5246 + 8K RAM
R G B & F.B.
VIDEO OUTPUT TO SCART FROM VERTICAL SAWTOOTH
GEOMETRY CORRECTION
I. C. 18 TDA8145/TDA4950
TO DIODE MODULATOR
PINOUT62.DRW
F11
(BLOCK CONNECTION FOR STEREO NICAM B/G)


AUDIO POWER AMPLIFIER
IC 8 TDA 2613
6 W
TUNER
PLL
SAW FILTER
PROG. MEMO
IIC bus
SOUND IN
SCART
RGB IN & F. B.
TR 6
TR 5
E.F.
SOUND OUT
CVBS IN
CVBS OUT
V. I.IN.
V. AMPL.
A.G.C.
R192
R194
R111
VERTICAL DEFLECTION
IC 17 TDA3654
TO DEFL. COILS
H. OUTPUT
SECAM DECODER
I.C. 10 TDA8395
CHROMA
14 16 11 12
B B. CHROMA D.L.
I. C. 11 TDA4661
39 40
CVBS1
MICRO CONTROLLER
PCA84C841/ 169
PCA84C641
OSD
S-VHS
RGB & F.B.
D3
D1
TDA8362A
52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
TR2
TR1
TR10
R86 (3K3)
R89 (2K2)
R87 (10K)
TV (0V)
CVBS (8V)
S-VHS (4V)
F2 4.5 MHz
F3
R94
R95
F11
BLOCK CONNECTION FOR MONO BG
B/G A.F.C. & VIDEO DEM.
DEMOD TANK
TR14
F4 & F5
SOUND TRAP
TR24
TR 25
TR 13
D28
TO CRT
VIDEO OUTPUT AMPLIFIER
I.C. 1 TDA5101A
R3
R9
R G B GAIN
D21 D22 D23
G B R
PRIORITY SWITCH
IC5 HCT 157
OSD RGB & F.B.
VIDEO OUTPUT TO SCART
TR 28
FROM VERTICAL SAWTOOTH
GEOMETRY CORRECTION
I. C. 18 TDA8145/TDA4950
TO DIODE MODULATOR
R201
R203
R205
E-W PAR.
TRAP
HOR. AMPL.
SYS 3
SYS 1
TR 11
TR 12
TR3 & TR22
R 202
TXT DEINTERLACE
TXT DECODER & PAGE MEMORY
SAA5246 + 8K RAM
SAA5281
IIC



Functional description

TDA 3654 is a vertical deflection output circuit that drives a vertical deflection system with current up to about 3 A. .


STEREO NICAM MODULE
IIC bus
I.F. IN
STD SWT
SCART INPUT
SCART OUTPUT
12 V
5 V
B/G
36 V / 28 V
AUDIO POWER AMPLIFIER
TDA 1521A OR TDA1521
HEAD PHON JACK SWT..
HEADPHONE
2 X 6 W
OR
2 X 12 W
TUNER PLL
SAW FILTER
IC 13 SCART SWITCH
SCART 1
SCART 2
RGB IN & F.B.
SCART 2 SWITCH CONTROL
CVBS 1 IN
CVBS 2 IN
HEF 4053
MICRO CONTROLLER
PCA84C841/169
PCA84C641
CVBS2
CVBS1
OSD
S-VHS
LINEARITY
AMPLITUDE
R192
R194
R111
A.G.C.
VERTICAL DEFLECTION
IC 17 TDA3654
SECAM DECODER
I.C. 10 TDA8395
TDA8362A
RGB & F.B..
D1
D2
D3
TR1
TR2
TR10
R86 (3K3)
R89 (2K2)
R87 (10K)
CVBS (8V)
S-VHS (4V)
TV (OV)
B/G
DEMOD. TANK
A.F.C. & VIDEO DEMODULATION
TR14
TR24
E.F.
SOUND TRAP
TR25
TR13
D28
D21
D22
D23
RGB PRIORITY SWITCH
IC5 HCT 157
OSD RGB & F.B.
VIDEO OUTPUT TO SCART
TO CRT
VIDEO OUTPUT AMPLIFIER
I.C. 1 TDA5101A
R3
R9
RGB GAIN
B B. CHROMA D.L.
I. C. 11 TDA4661
TXT DE INTERL
R 202
TR3 & TR22
TXT DECODER & PAGE MEMORY
SAA5246 + 8K RAM
SAA5281
RGB & F.B.
TR 28
FROM VERTICAL SAWTOOTH
GEOMETRY CORRECTION
I. C. 18 TDA8145/TDA4950
TO DIODE MODULATOR
R201
R203
R205
E-W PAR.
TRAP.
HOR. AMPL.
F11
BLOCK CONNECTION FOR STEREO NICAM B/G

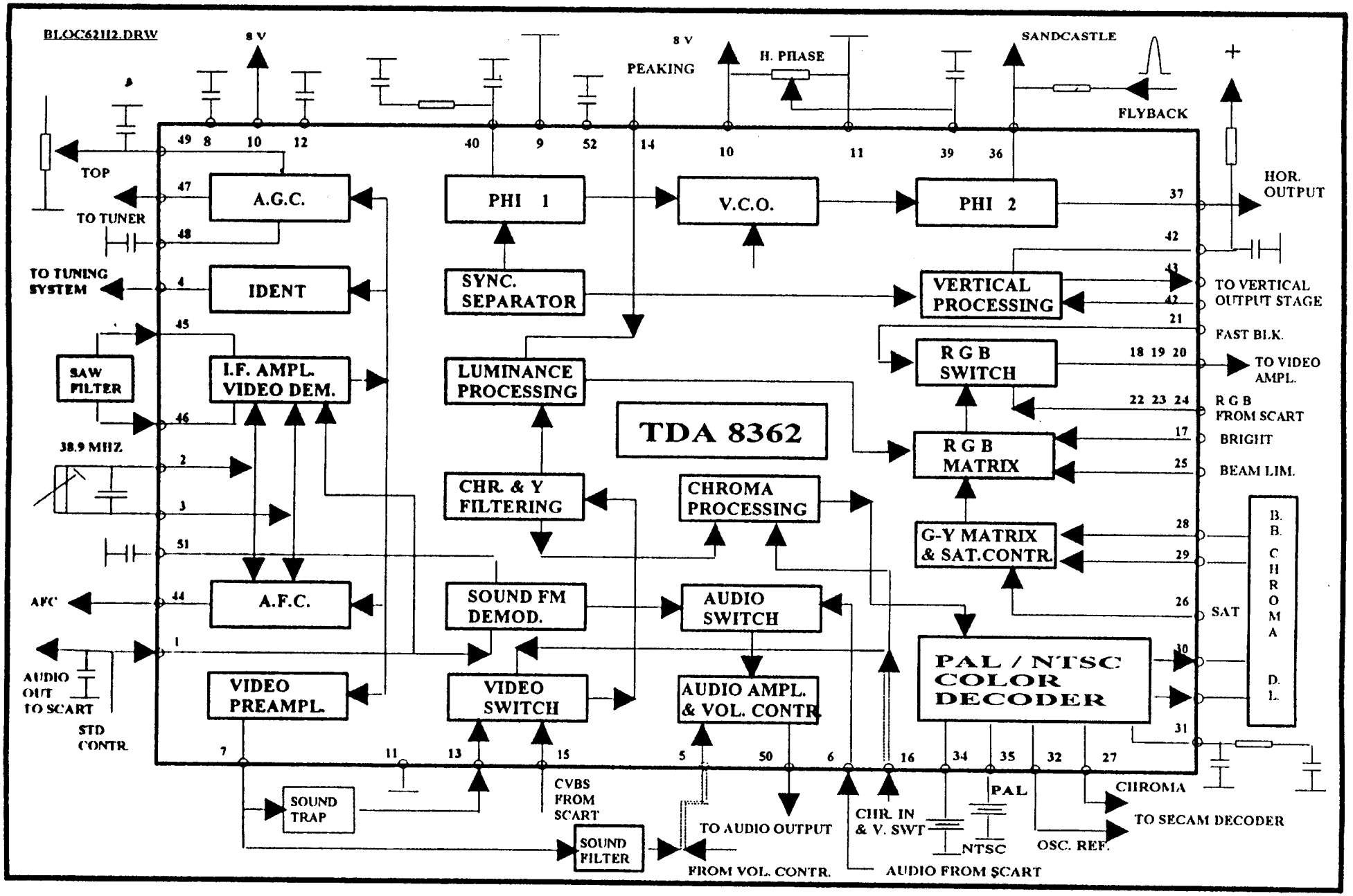
20a

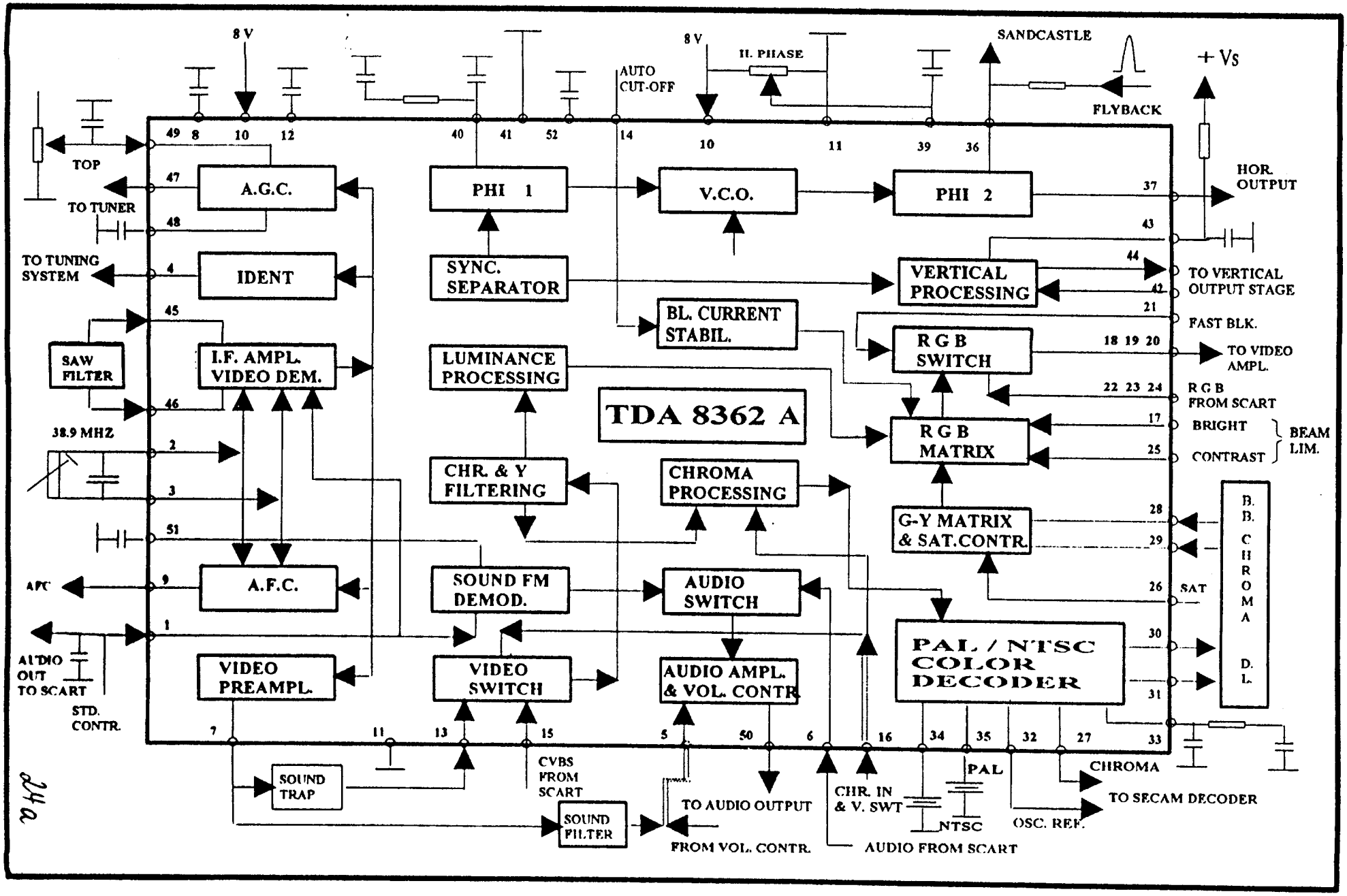
MONOCHIP - PIN DESCRIPTION FOR TDA 8362

1- de-emphasise + positive and negative modulation
2- demodulator input
3- demodulator input
4- identification output
5- IF sound input + volume control
6- external sound input
7- IF video output
8- digital section decoup.
9- ground
10- power supply
11- ground
12- tuning decoup.
13- video input
14- peaking
15- external video input
16- A/V input + chroma input
17- brightness
18- Blue output
19- Green output
20- Red output
21- fast blanking input
22- external Red input
23- external Green output
24- external Blue output
25- contrast
26- saturation
27- hue + chroma output
28- B-Y input
29- R-Y input
30- R-Y output
31- B-Y output
32- 4.43 MHz ref. output
33- phase detector
34- 3.58 MHz input
35- 4.43 MHz input
36- horizontal oscillator start
37- horizontal drive output
38- sandcastle/flyback output/input
39- if filter 2
40- if filter 1
41- vertical feedback input
42- vertical ramp generator
43- vertical drive output
44- AFC output
45- IF input
46- IF input
47- AGC output
48- AGC decoup.
49- AGC regulation
50- audio output
51- sound demod. decoup
52- power-supply decoup

Differences with respect to TDA 8361

pin 1	solely audio de-emphasise
pin 27	solely hue
pin 32	4.43 MHz output not connected


BLOC62H2.DRW
8 V
8 V
PEAKING
H. PHASE
SANDCASTLE
FLYBACK
TOP
TO TUNER
TO TUNING SYSTEM
SAW FILTER
38.9 MHZ
AFC
AUDIO OUT TO SCART
STD CONTR
A.G.C.
IDENT
I.F. AMPL. VIDEO DEM.
A.F.C.
VIDEO PREAMPL.
PHI 1
V.C.O.
PHI 2
SYNC. SEPARATOR
LUMINANCE PROCESSING
CHR. & Y FILTERING
SOUND FM DEMOD.
VIDEO SWITCH
TDA 8362
CHROMA PROCESSING
AUDIO SWITCH
AUDIO AMPL. & VOL. CONTR
VERTICAL PROCESSING
R G B SWITCH
R G B MATRIX
G-Y MATRIX & SAT.CONTR.
PAL / NTSC COLOR DECODER
HOR. OUTPUT
TO VERTICAL OUTPUT STAGE
FAST BLK.
TO VIDEO AMPL.
R G B FROM SCART
BRIGHT
BEAM LIM.
SAT
B. B. C H R O M A D. L.
SOUND TRAP
SOUND FILTER
CVBS FROM SCART
TO AUDIO OUTPUT
FROM VOL. CONTR.
CHR. IN & V. SWT
PAL
NTSC
OSC. REF.
CHROMA
TO SECAM DECODER
AUDIO FROM SCART


8 V
AUTO CUT-OFF
8 V
H. PHASE
SANDCASTLE
FLYBACK
+ Vs
TOP
TO TUNER
TO TUNING SYSTEM
A.G.C.
IDENT
PHI 1
V.C.O.
PHI 2
HOR. OUTPUT
SYNC. SEPARATOR
VERTICAL PROCESSING
TO VERTICAL OUTPUT STAGE
BL. CURRENT STABIL.
FAST BLK.
SAW FILTER
I.F. AMPL. VIDEO DEM.
LUMINANCE PROCESSING
R G B SWITCH
TO VIDEO AMPL.
TDA 8362 A
R G B FROM SCART
38.9 MHZ
R G B MATRIX
BRIGHT
CONTRAST
BEAM LIM.
CHR. & Y FILTERING
CHROMA PROCESSING
G-Y MATRIX & SAT.CONTR.
B. B. CHROMA D. L.
AFC
A.F.C.
SOUND FM DEMOD.
AUDIO SWITCH
SAT
AUDIO OUT TO SCART
STD. CONTR.
VIDEO PREAMPL.
VIDEO SWITCH
AUDIO AMPL. & VOL. CONTR
PAL / NTSC COLOR DECODER
SOUND TRAP
CVBS FROM SCART
SOUND FILTER
TO AUDIO OUTPUT
FROM VOL. CONTR.
CHR. IN & V. SWT
AUDIO FROM SCART
PAL
NTSC
OSC. REF.
CHROMA
TO SECAM DECODER

Functional description of monochip TDA 8361/2

-IF Amplifier

The amplifier contains three differential stages with typical 60 dB dynamic control. The demodulator's polarity is suited for both positive and negative modulation in the TDA 8362 version (multi-standard PAL, SECAM, L L'), **and for only negative modulation in TDA 8361.**

The AFC circuit is driven by the same reference signal as the video demodulator. The AFC output voltage varies in the range 0--6V. . The circuit for identifying the presence of the signal in the transmission channel works independently of the synchronisation circuit : 0V. no identification and mute sound; 8V. identification and 4.43 MHz chroma frequency; 6V. identification and chroma frequency 3.58 MHz.

The AGC system controls the IF amplifier gain is such a way that the amplitude of the output video signal remains contrast. The voltage of the AGC capacitors (pin 48) takes into account the IF amplification level. A second loop acts on the tuner to amplify the IF input. The amplification level is regulated by potentiometer R 111.

-Sound circuit

The inter-carrier signal is amplified/limited and demodulated by a PLL (phase locked loop). The PLL circuit automatically locks onto the incoming signal. The volume controls the amplitude of the composite audio signal (pin 5) . (700mV max).

-Horizontal and vertical synchronisation circuit

Upstream of the sync. separator there is an amplifier that raises the synchronism pulse to a fixed level. The separated synchronism pulses are forwarded to the phase and coincidence detectors. The coincidence detector is used to synchronise the line oscillator and to identify the transmission channel. The integrated circuit contains a start-up circuit for the horizontal output (pin 36). The driving pulses for the vertical are generated by a divided circuit. The components for the generation of the vertical ramp are connected to pin 42. The feedback voltage from the vertical amplification stage is connected to pin 41.

-Video filters

The integrated circuit contains a chroma trap and band-pass circuit. The filters are implemented by means of circuit with gyrators. The chroma trap is active when the chroma input pin (pin 16) is connected to ground or directly to the power supply. If pin 16 is held at intermediate voltage, the trap does not operate and therefore S-VHS application is possible. The luminance delay line and the delay for peaking circuit are implemented by means of circuit with gyrators.

-Colour decoder

The colour decoder contains a quartz-controlled oscillator, a killer circuit, and a colour difference demodulator. The 90° phase deviation is effected internally. The decoder adapts automatically to the PAL and NTSC system. For this purpose there are two pins 35 and 34. With TDA 8362, a PAL/SECAM/NTSC automatic multi-standard decoder may be built through the addition of the SECAM TDA 8395 decoder.

-RGB output circuit

The colour difference signals enter the matrices with the luminance signal to obtain the RGB signals. The integrated circuit handles the internal signals and those coming from outside (SCART connector). Brightness and contrast act both on the internal signals and the external ones. Pin 21 of the fast blanking has a second, 4V, threshold level. When this level is exceeded the RGB outputs are blocked and the OSD signals are sent directly to the output amplifier. The RGB signals have an amplitude of about 4V under nominal operating conditions.

Functional description of monochip TDA 8361/2A

-IF Amplifier

The amplifier contains three differential stages with typical 60 dB dynamic control. The demodulator's polarity is suited for both positive and negative modulation in the TDA 8362A version (multi-standard PAL, SECAM, L L'), **and for only negative modulation in TDA 8361A.**

The AFC circuit is driven by the same reference signal as the video demodulator. The AFC output voltage varies in the range 0--6V. The circuit for identifying the presence of the signal in the transmission channel works independently of the synchronisation circuit : 0V, no identification and mute sound; 8V, identification and 4.43 MHz chroma frequency; 6V, identification and chroma frequency 3.58 MHz.

The AGC system controls the IF amplifier gain is such a way that the amplitude of the output video signal remains constant. The voltage of the AGC capacitors (pin 48) takes into account the IF amplification level. A second loop acts on the tuner to amplify the IF input. The amplification level is regulated by potentiometer R 111.

-Sound circuit

The inter-carrier signal is amplified/limited and demodulated by a PLL (phase locked loop). The PLL circuit automatically locks onto the incoming signal. The volume controls the amplitude of the composite audio signal (pin 5) . (700mV max).

-Horizontal and vertical synchronisation circuit

Upstream of the sync. separator there is an amplifier that raises the synchronism pulse to a fixed level. The separated synchronism pulses are forwarded to the phase and coincidence detectors. The coincidence detector is used to synchronise the line oscillator and to identify the transmission channel. The integrated circuit contains a start-up circuit for the horizontal output (pin 36). The driving pulses for the vertical are generated by a divider circuit. The components for the generation of the vertical ramp are connected to pin 43. The feedback voltage from the vertical amplification stage is connected to pin 42.

-Video filters

The integrated circuit contains a chroma trap and band-pass circuit. The filters are implemented by means of circuit with gyrators. The chroma trap is active when the chroma input pin (pin 16) is connected to ground or directly to the power supply. If pin 16 is held at intermediate voltage, the trap does not operate and therefore S-VHS application is possible. The luminance delay line is implemented by means of circuit with gyrators.

-Colour decoder

The colour decoder contains a quartz-controlled oscillator, a killer circuit, and a colour difference demodulator. The 90° phase deviation is effected internally. The decoder adapts automatically to the PAL and NTSC system. For this purpose there are two pins 35 and 34. With TDA 8362A, a PAL/SECAM/NTSC automatic multi-standard decoder may be built through the addition of the SECAM TDA 8395 decoder.

-RGB output circuit

The colour difference signals enter the matrices with the luminance signal to obtain the RGB signals. The integrated circuit handles the internal signals and those coming from outside (SCART connector). Brightness and contrast act both on the internal signals and the external ones. Pin 21 of the fast blanking has a second, 4V, threshold level. When this level is exceeded the RGB outputs are blocked and the OSD signals are sent directly to the output amplifier. The RGB signals have an amplitude of about 4V under nominal operating conditions.

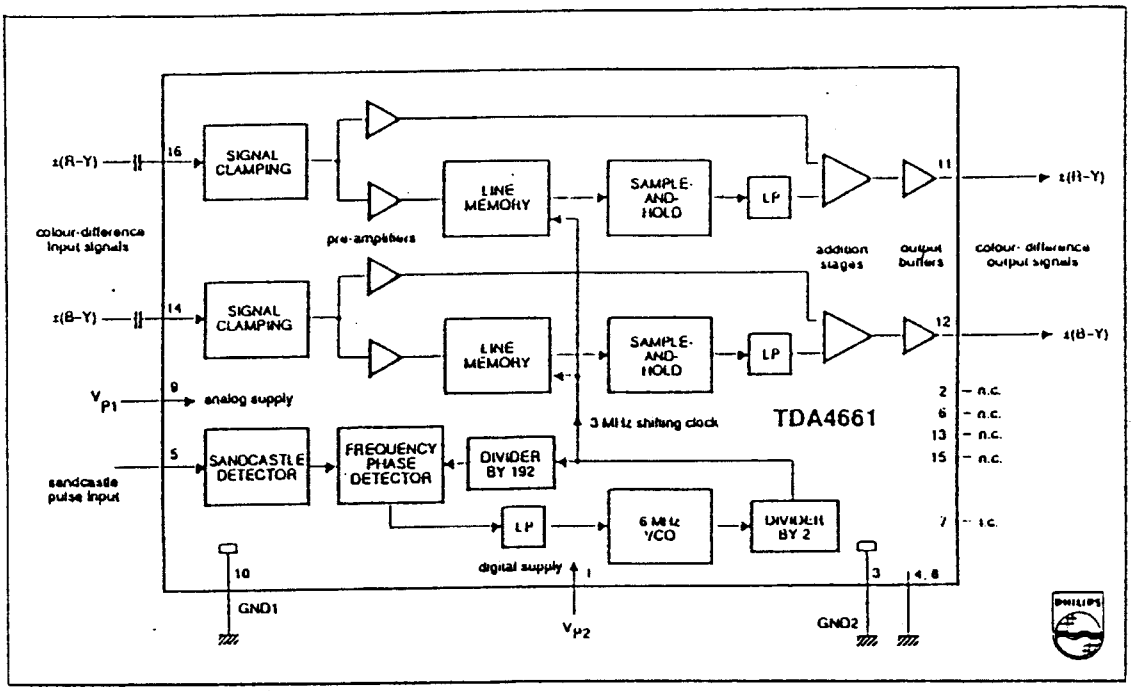
MONOCHIP - PIN DESCRIPTION FOR TDA 8362A

1- Audio deemphasis and +/- mod. switch
2- IF-demodulator tuned circuit
3- IF-demodulator tuned circuit
4- Video identification output
5- Sound IF in plus volume control
6- External audio input
7- IF video output
8- Decoupling digital supply
9- AFC output
10- Positive supply (8 V)
11- Ground
12- Decoupling filter tuning
13- Internal CVBS input
14- Black-current input
15- External CVBS input
16- Chroma + A/V switch input
17- Brightness control input
18- B-output
19- G-output
20- R-output
21- RGB-insertion and blanking input
22- R-input for insertion
23- G-input for insertion
24- B-input for insertion
25- Contrast control input
26- Saturation control input
27- Hue control input (or chroma out)
28- B - Y input signal
29- R - Y input signal
30- R - Y output signal
31- B - Y output signal
32- 4.43 Mhz output for TDA 8395
33- Loop filter burst phase detector
34- 3.58 Mhz X-tal connection
35- 4.43 Mhz X-tal connection
36- Start horizontal oscillator
37- Horizontal output
38- Flyback input / sandcastle output
39- Phi - 2 loop filter
40- Phi - 1 loop filter
41- Ground
42- Vertical feedback input
43- Vertical ramp generator
44- Vertical output
45- IF-input
46- IF-input
47- Tuner AGC output
48- AGC decoupling capacitor
49- Tuner take-over adjustment
50- Audio output
51- Decoupling sound demodulator
52- Decoupling bandgap supply

The TDA 8361A has the following differences :

Pin 1	Only audio deemphasis
Pin 27	Only hue control
Pin 32	4.43 Mhz output for the TDA8395 not connected

DELAY LINE - TDA 4661



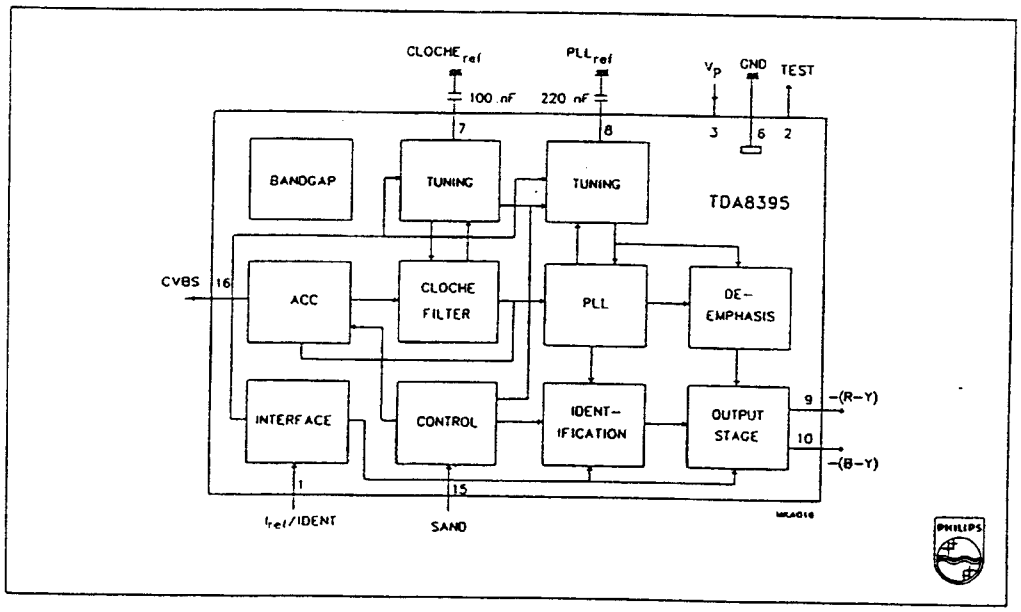
Pinout description

1- digital section +5V power supply
2- not connected
3- digital section ground
4- internally connected
5- sandcaste input
6- not connected
7- internally connected
8- internally connected
9- analog section +5V power supply
10- analog section ground
11- (R-Y) signal output
12- (B-Y) signal output
13- not connected
14- (B-Y) signal input
15- not connected
16- (R-Y) signal input

Functional description

The integrated circuit TDA 4661 is a delay line in integrated baseband. It interfaces with decoders with colour difference output signals (R-Y) and (B-Y).

SECAM DECODER - TDA 8395



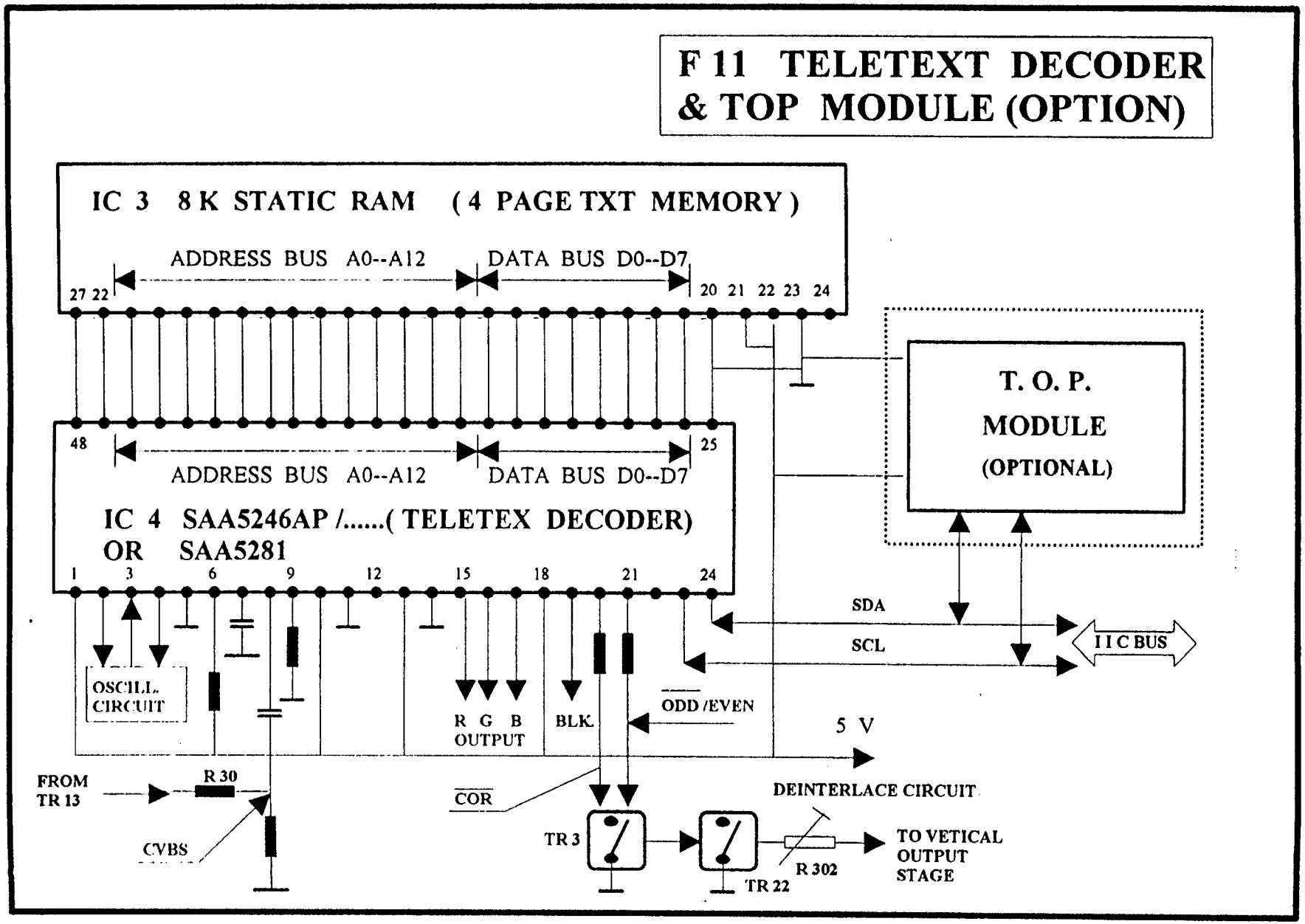
Pin description TDA 8395

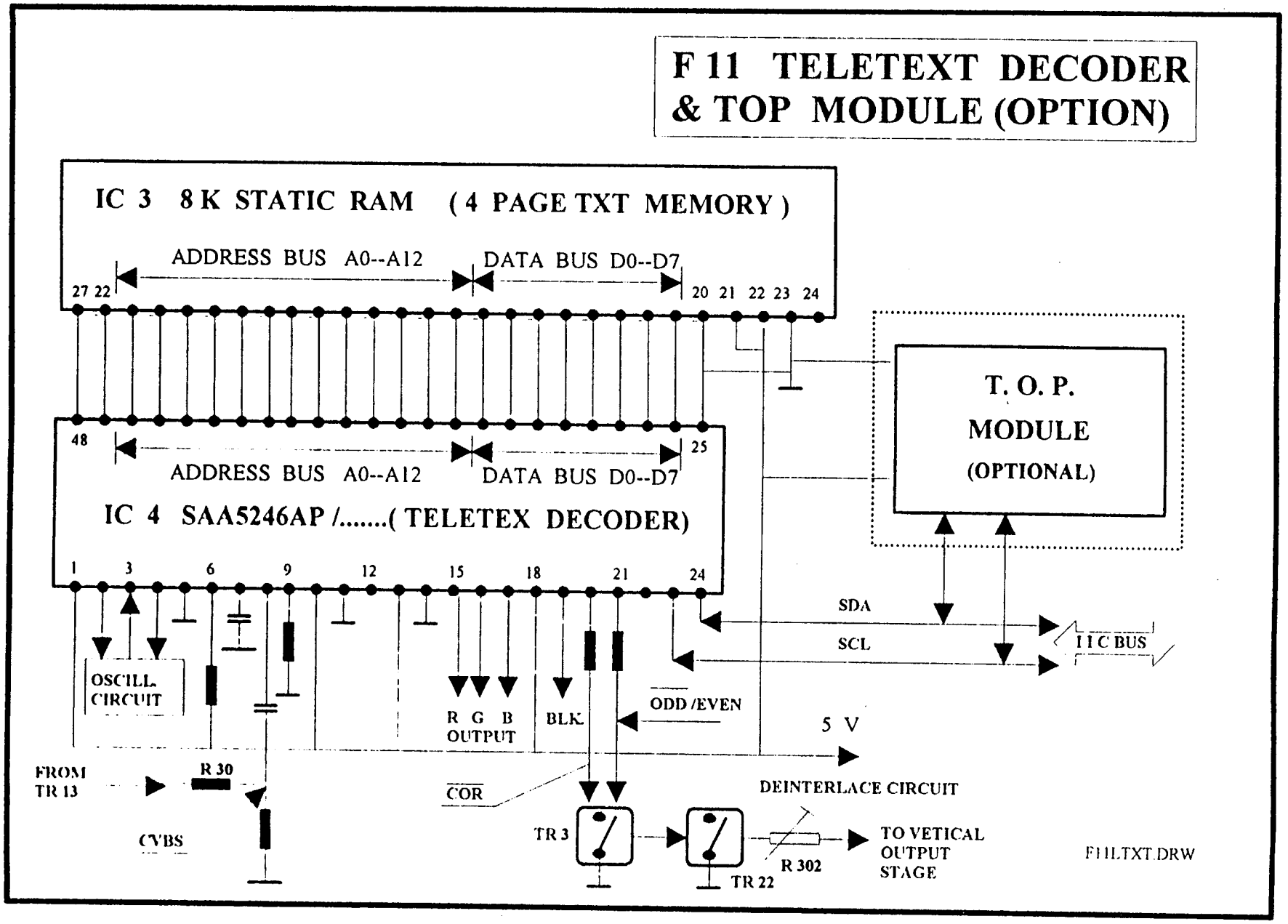
1- identification input
2- test
3- power supply
4- n.c.
5- n.c.
6- ground
7- cloche filter reference
8- PLL reference
9- -(R-Y) output
10- -(B-Y) output
11- n.c.
12- n.c.
13- n.c.
14- n.c.
15- sandcastle input
16- video input

Functional description

TDA 8395 is a completely integrated SECAM decoder. The integrated circuit incorporates HF and LF filters, a demodulator , and an identification circuit. No regulation is necessary. Requirements include a stable reference frequency for calibration and a sandcastle two-level pulse for the blanking and burst gating functions.

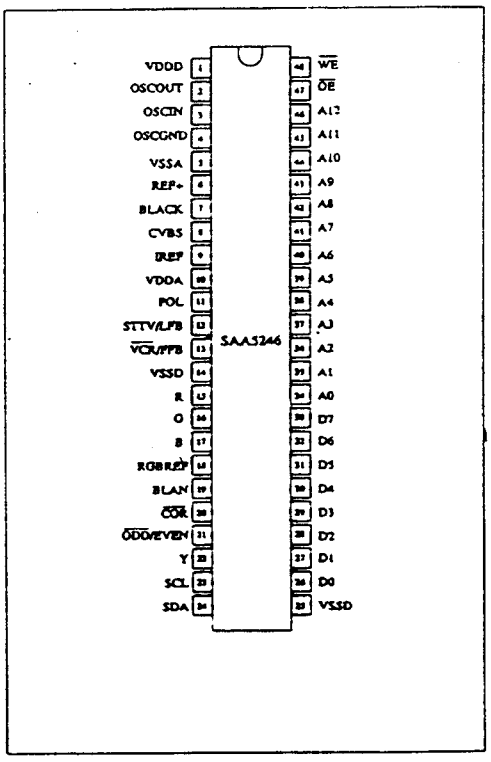
F 11 TELETEXT DECODER & TOP MODULE (OPTION)




F 11 TELETEXT DECODER
& TOP MODULE (OPTION)
IC 3 8 K STATIC RAM (4 PAGE TXT MEMORY)
ADDRESS BUS A0--A12
DATA BUS D0--D7
27 22
20 21 22 23 24
T. O. P.
MODULE
(OPTIONAL)
48
25
ADDRESS BUS A0--A12
DATA BUS D0--D7
IC 4 SAA5246AP /.....(TELETEX DECODER)
1 3 6 9 12 15 18 21 24
SDA
SCL
I I C BUS
OSCILL.
CIRCUIT
R G B
OUTPUT
BLK
ODD /EVEN
5 V
FROM
TR 13
R 30
CVBS
COR
DEINTERLACE CIRCUIT
TR 3
TR 22
R 302
TO VETICAL
OUTPUT
STAGE
F11LTXT.DRW

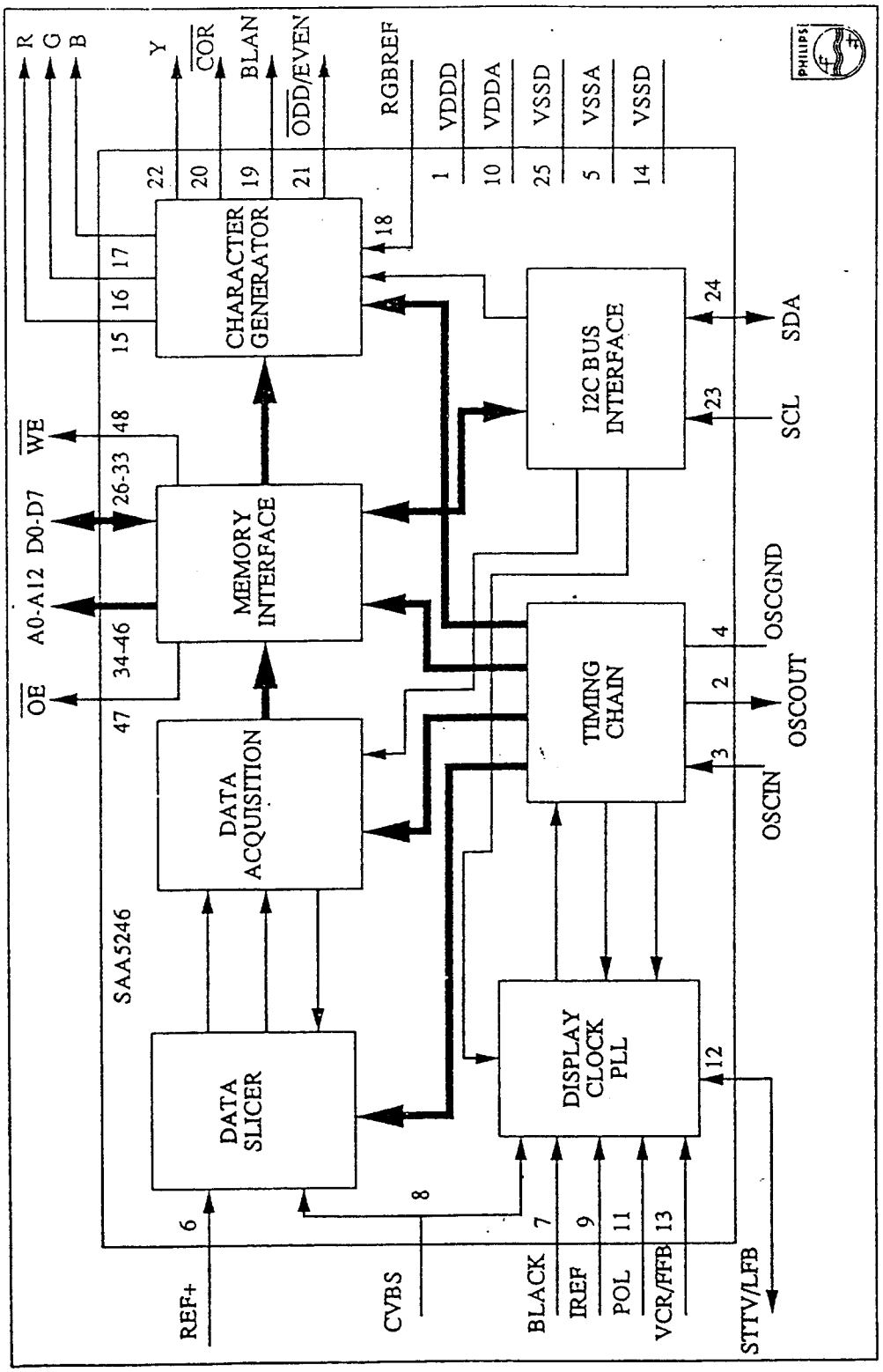
Pin description for TELETEXT SAA 5246AP/..

1 - power supply
2 - oscillator output
3 - oscillator input
4 - oscillator ground
5 - analogic ground
6 - ADC reference voltage
7 - black level reference input
8 - composite video input
9 - current reference input
10 - power supply analogic
11 - polarity section
12 - sync input/output
13 - PLL time-contrast input
14 - ground
15 - Red output
16 - Green output
17 - Blue output
18 - DC voltage level on RGB
19 - Fast blanking output
20 - contrast-reduction programmable output
21 - de-interlace output
22 - Y out
23 - i2c bus
24 - i2c bus
25 - ground
26 - D0
27 - D1
28 - D2
29 - D3 RAM DATA
30 - D4
31 - D5
32 - D6
33 - D7
34 - A0
35 - A1
36 - A2
37 - A3
38 - A4
39 - A5
40 - A6 RAM ADDRESS
41 - A7
42 - A8
43 - A9
44 - A10
45 - A11
46 - A12
47 - output enable
48 - write enable

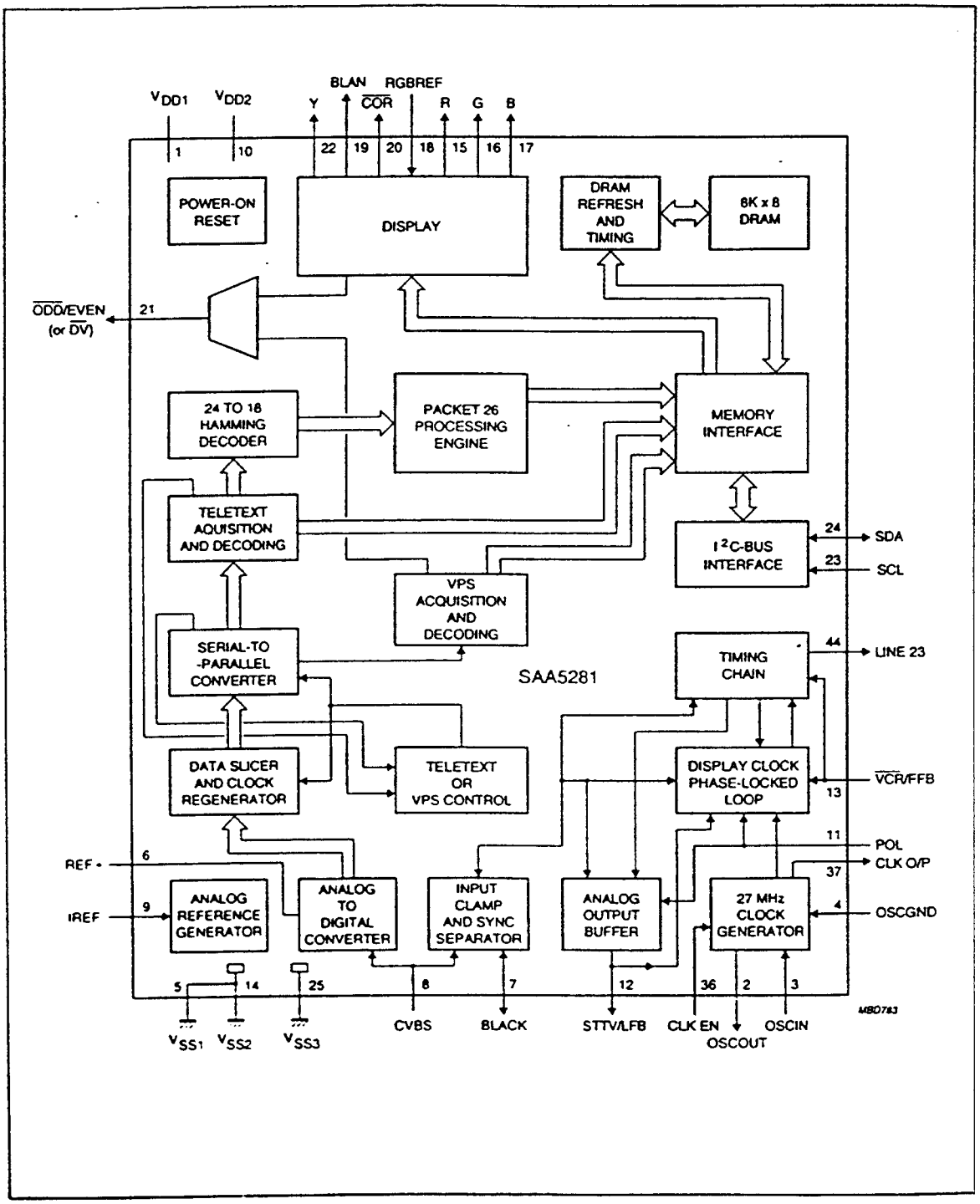


Functional description

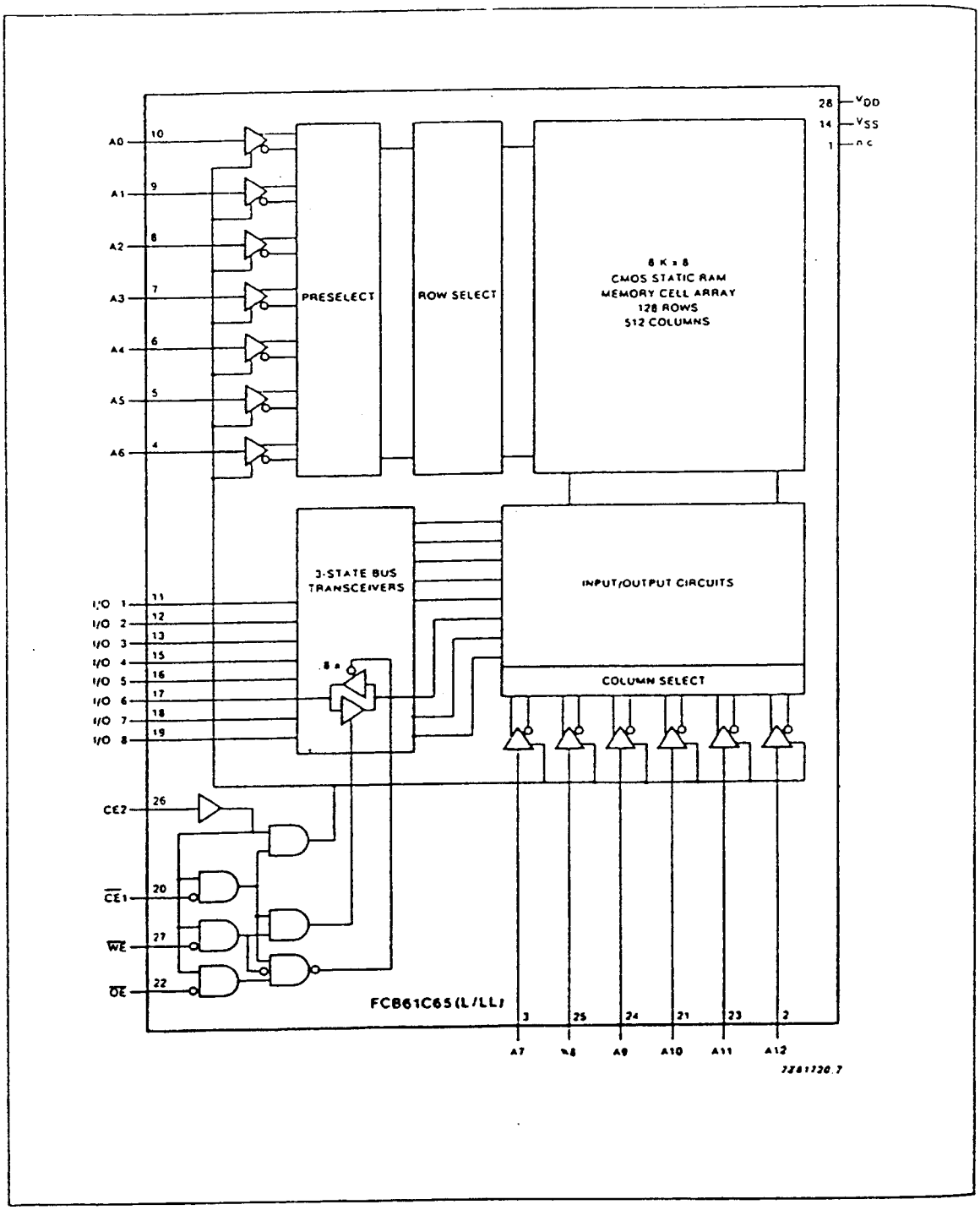
The integrate circuit SAA 5246 is a teletext decoder with 4 page memory with separated RAM.

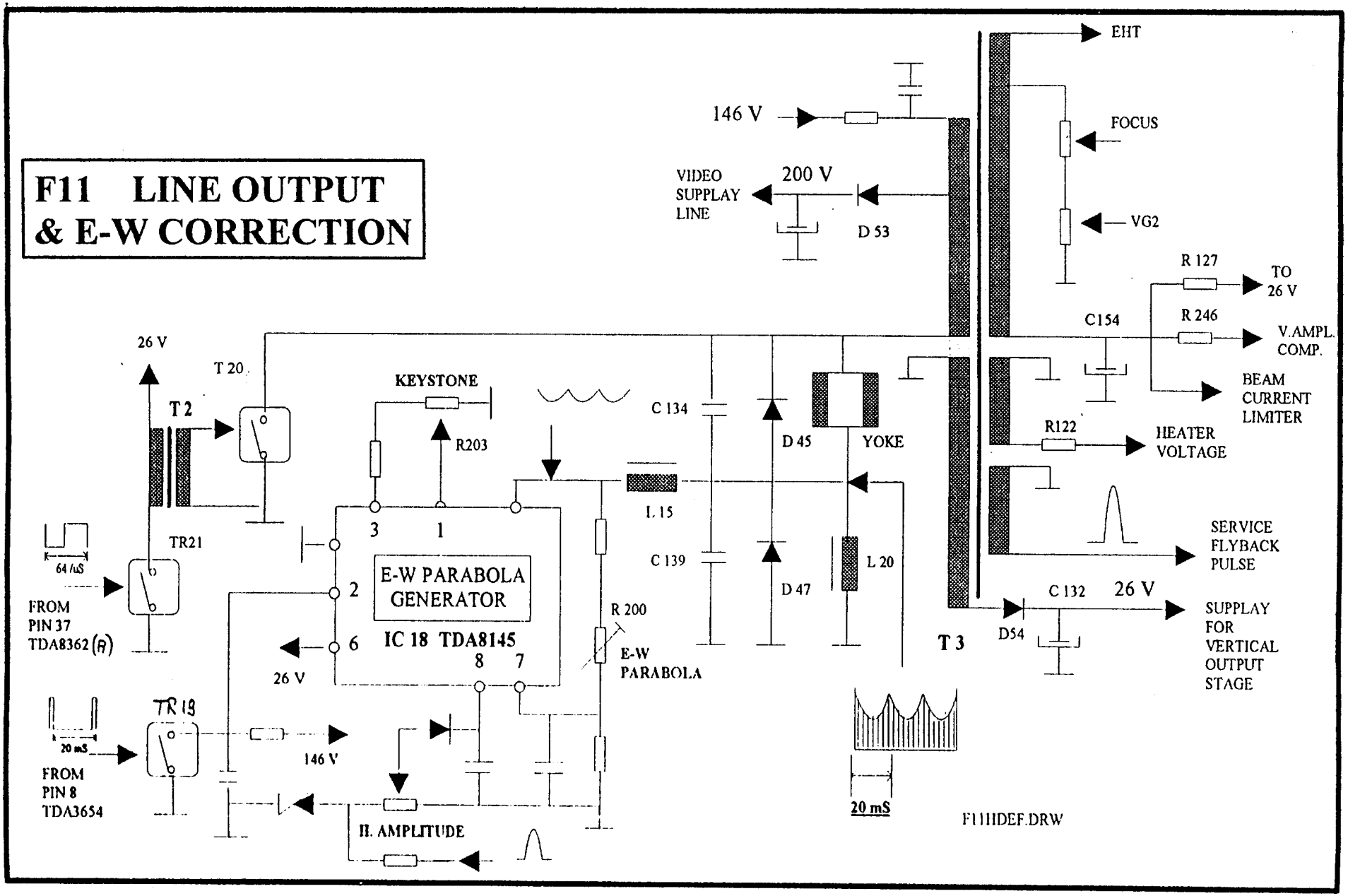

SAA5246
CHARACTER GENERATOR
MEMORY INTERFACE
DATA ACQUISITION
DATA SLICER
TIMING CHAIN
DISPLAY CLOCK PLL
I2C BUS INTERFACE
R
G
B
Y
COR
BLAN
ODD/EVEN
RGBREF
VDDD
VDDA
VSSD
VSSA
VSSD
WE
D0-D7
A0-A12
OE
REF+
CVBS
BLACK
IREF
POL
VCR/FFB
STTV/LFB
OSCGND
OSCOUT
OSCIN
SDA
SCL

TELETEXT - SAA 5281



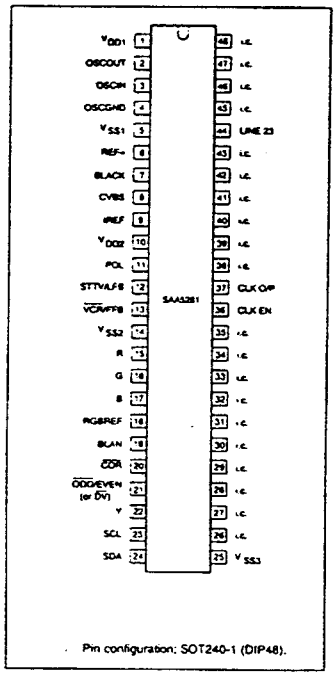
RAM - FCB 61C65




F11 LINE OUTPUT
& E-W CORRECTION
EHT
146 V
FOCUS
VIDEO
SUPPLAY
LINE
200 V
D 53
VG2
R 127
TO
26 V
C154
R 246
V.AMPL.
COMP.
BEAM
CURRENT
LIMITER
R122
HEATER
VOLTAGE
26 V
T 20
T 2
KEYSTONE
R203
C 134
D 45
YOKE
L 15
SERVICE
FLYBACK
PULSE
TR21
64 uS
FROM
PIN 37
TDA8362 (A)
3
1
2
E-W PARABOLA
GENERATOR
IC 18 TDA8145
6
8
7
26 V
C 139
D 47
L 20
R 200
E-W
PARABOLA
T 3
C 132
26 V
D54
SUPPLAY
FOR
VERTICAL
OUTPUT
STAGE
TR 19
20 mS
FROM
PIN 8
TDA3654
146 V
II. AMPLITUDE
20 mS
F11IDEF.DRW

TELETEXT SAA 5281 pinout description

1- Power supply
2- 27 Mhz oscillator output
3- 27 Mhz oscillator input
4- Oscillator ground
5- Analogic ground
6- ADC reference voltage
7- Black level reference input
8- Composite video input
9- Current reference input
10- Power supply analogic
11- Polarity selection
12- Sync input/output
13- PLL time-constant input
14- Ground
15- Red output
16- Green output
17- Blue output
18- DC voltage level on RGB
19- Fast blanking output
20- Contrast-reduction programmable output
21- De-interlace output
22- Y out
23- i2c bus
24- i2c bus
25- Ground
26- i.c.
27- i.c.
28- i.c.
29- i.c.
30- i.c.
31- i.c.
32- i.c.
33- i.c.
34- i.c.
35- i.c.
36- Clk en
37- Clk o/p
38- i.c.
39- i.c.
40- i.c.
41- i.c.
42- i.c.
43- i.c.
44- Line 23
45- i.c.
46- i.c.
47- i.c.
48- i.c.

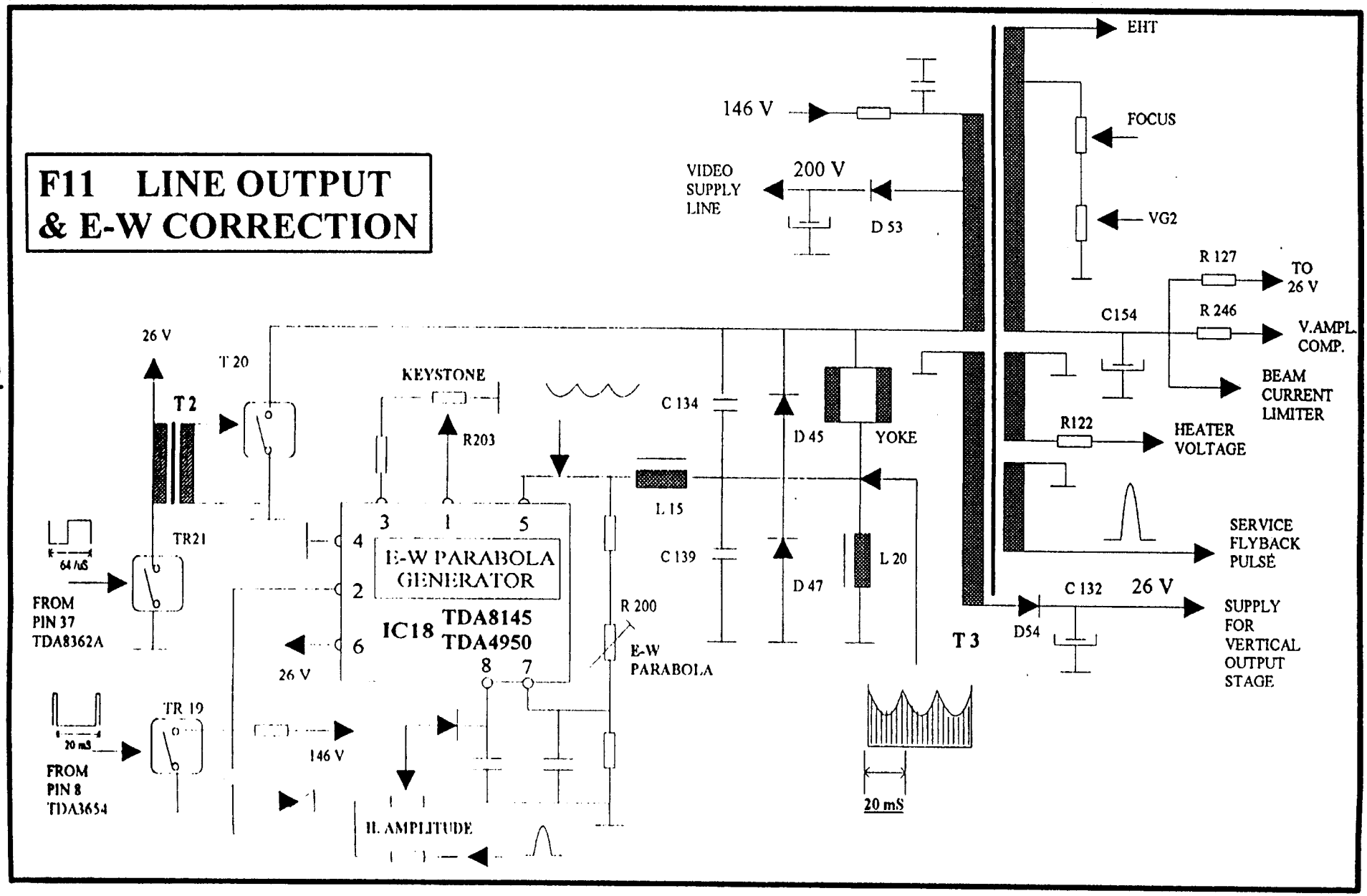


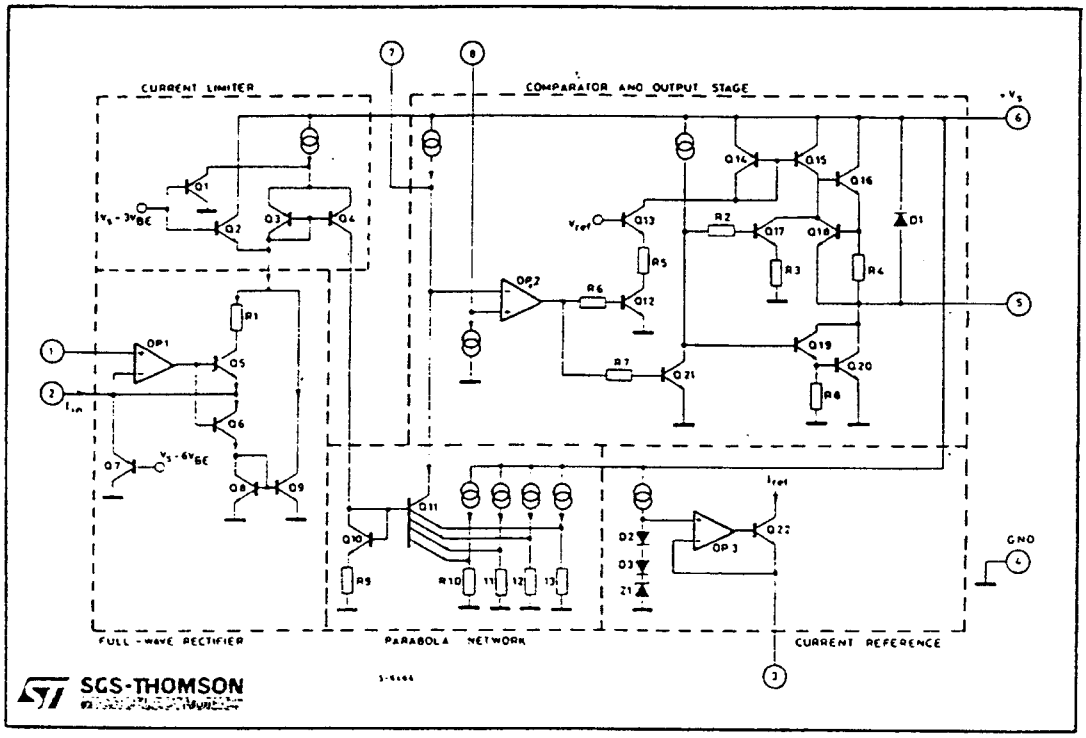
Pin configuration: SOT240-1 (DIP48).

Functional description

The integrate circuit SAA 5281 is a teletext decoder with 4 page memory.

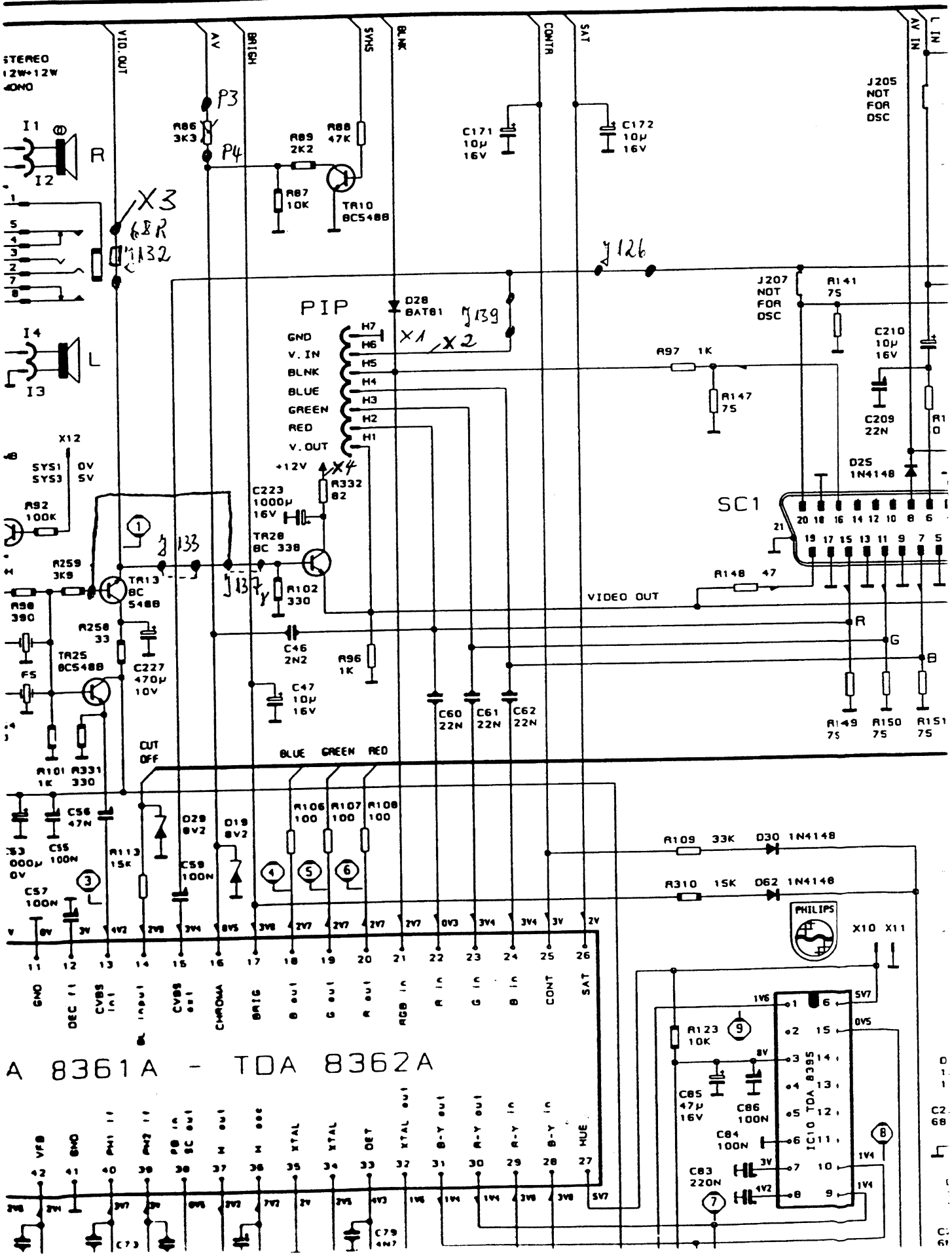
F11 LINE OUTPUT & E-W CORRECTION

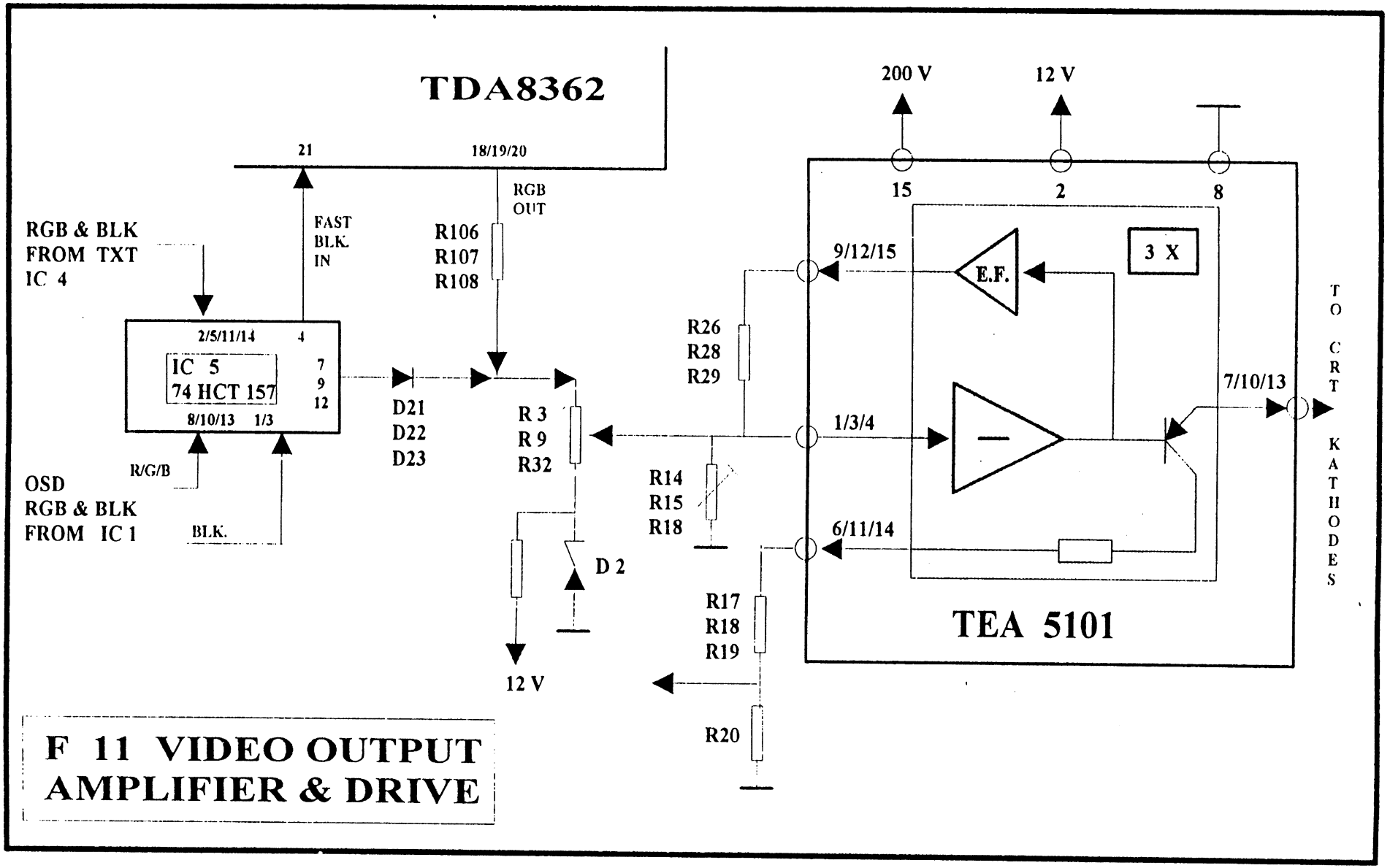




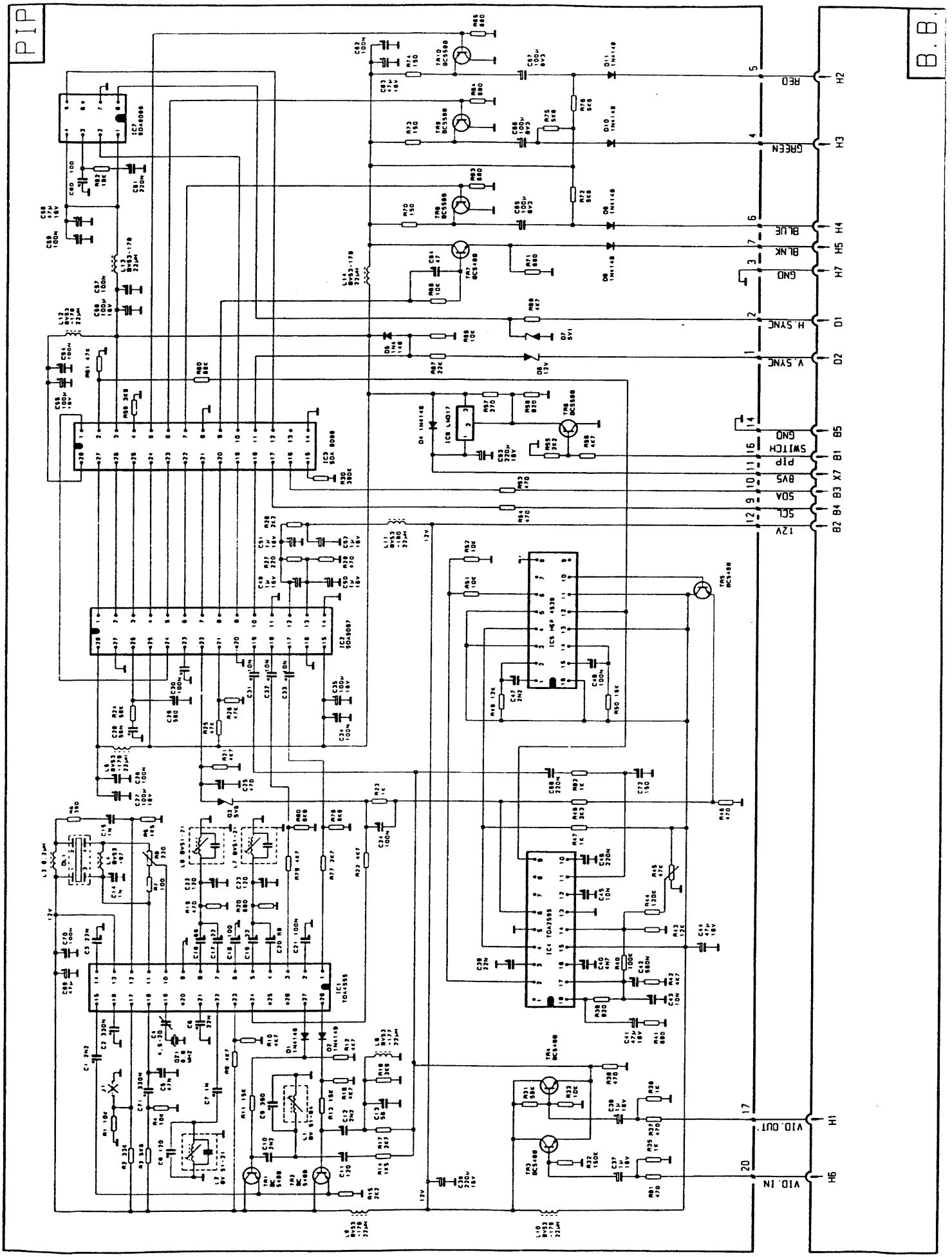
PINNING

1- keystone correction input
2- frame sawtooth current input
3- current reference
4- ground
5- output
6- power supply
7- parabola output/inverting input
8- non-inverting input


A 8361A - TDA 8362A
PIP
SC1
PHILIPS
VIDEO OUT
CUT OFF
BLUE GREEN RED
GND
V. IN
BLNK
BLUE
GREEN
RED
V. OUT
+12V
R
G
B
CONT
SAT
BRIGH
CHROMA
TDA 8395

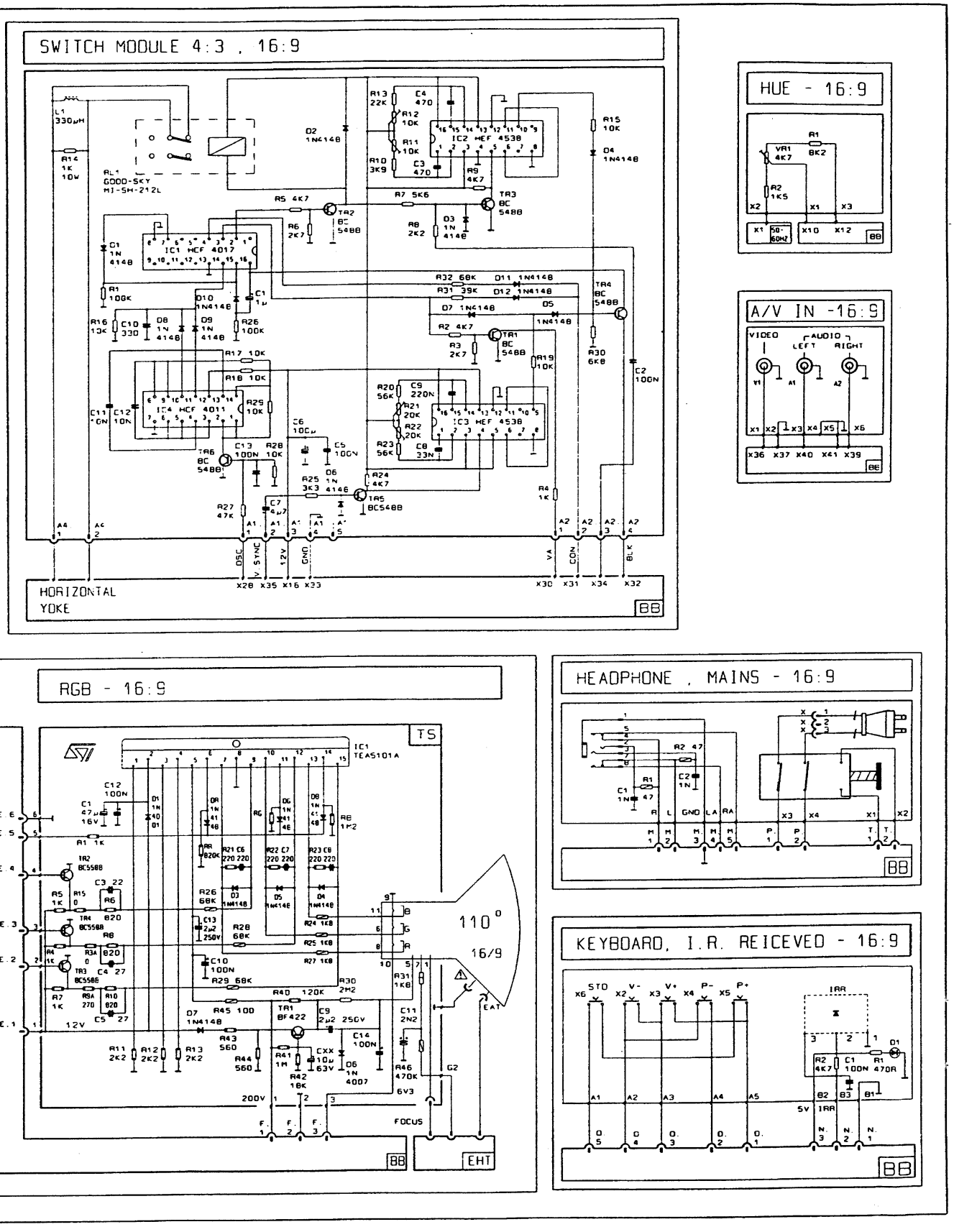

TDA8362
21
18/19/20
RGB
OUT
FAST
BLK.
IN
RGB & BLK
FROM TXT
IC 4
R106
R107
R108
2/5/11/14
4
IC 5
74 HCT 157
7
9
12
8/10/13
1/3
D21
D22
D23
R 3
R 9
R32
R/G/B
OSD
RGB & BLK
FROM IC 1
BLK.
D 2
12 V
R26
R28
R29
R14
R15
R18
R17
R18
R19
R20
200 V
12 V
15
2
8
9/12/15
E.F.
3 X
1/3/4
7/10/13
6/11/14
TEA 5101
TO CRT KATHODES
F 11 VIDEO OUTPUT
AMPLIFIER & DRIVE

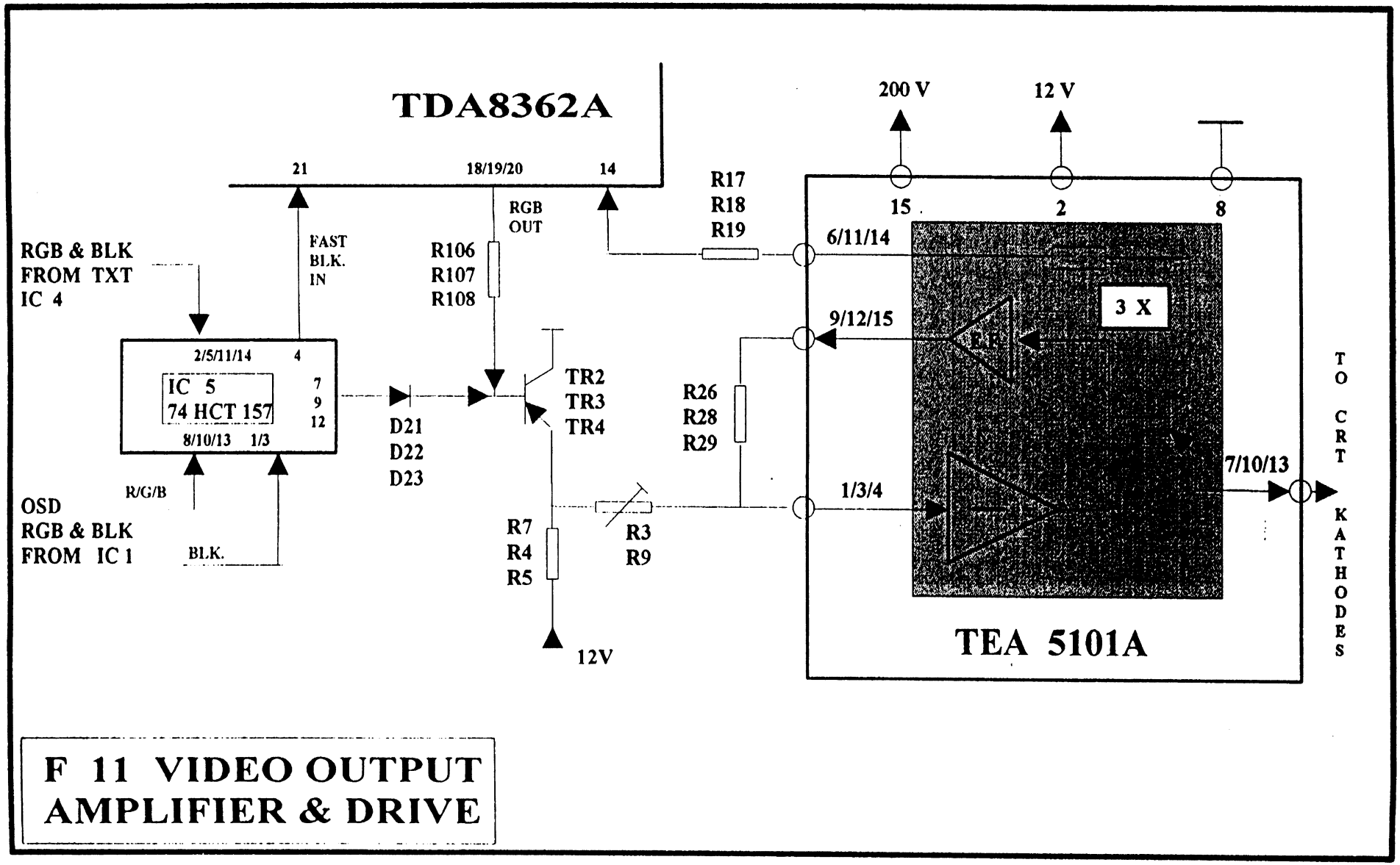
Pal/Secam Version



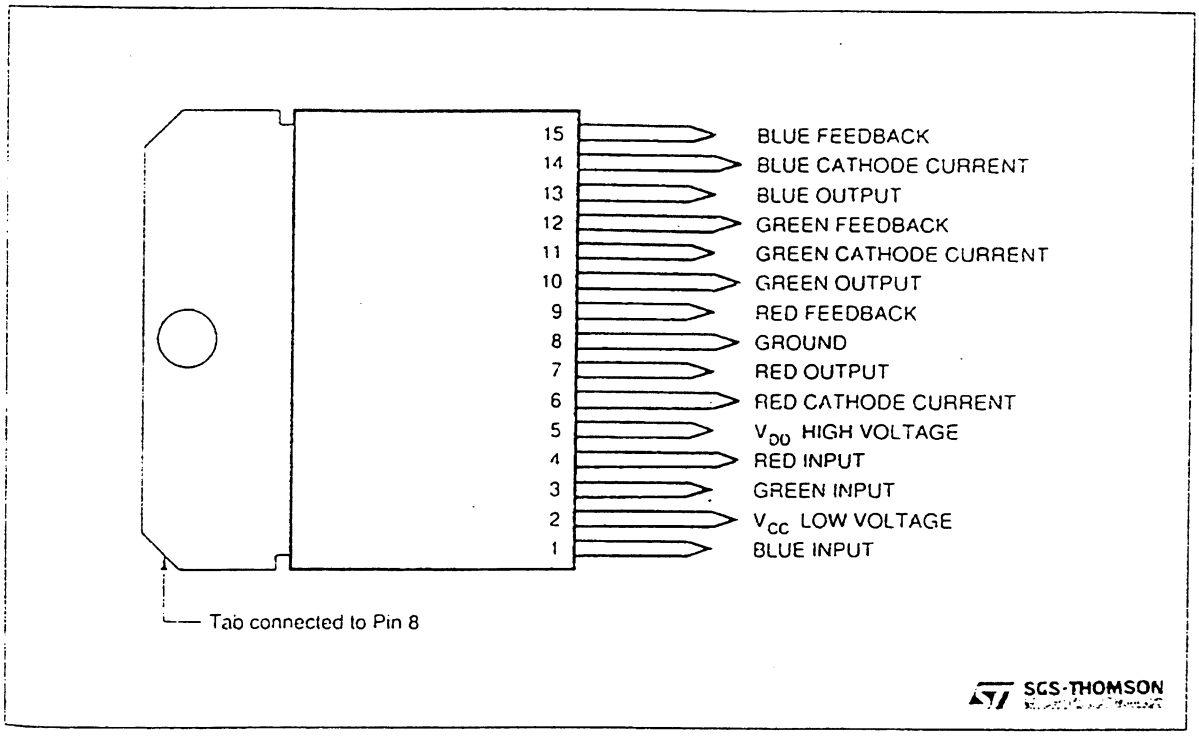
88.65.5036900

8865503800200



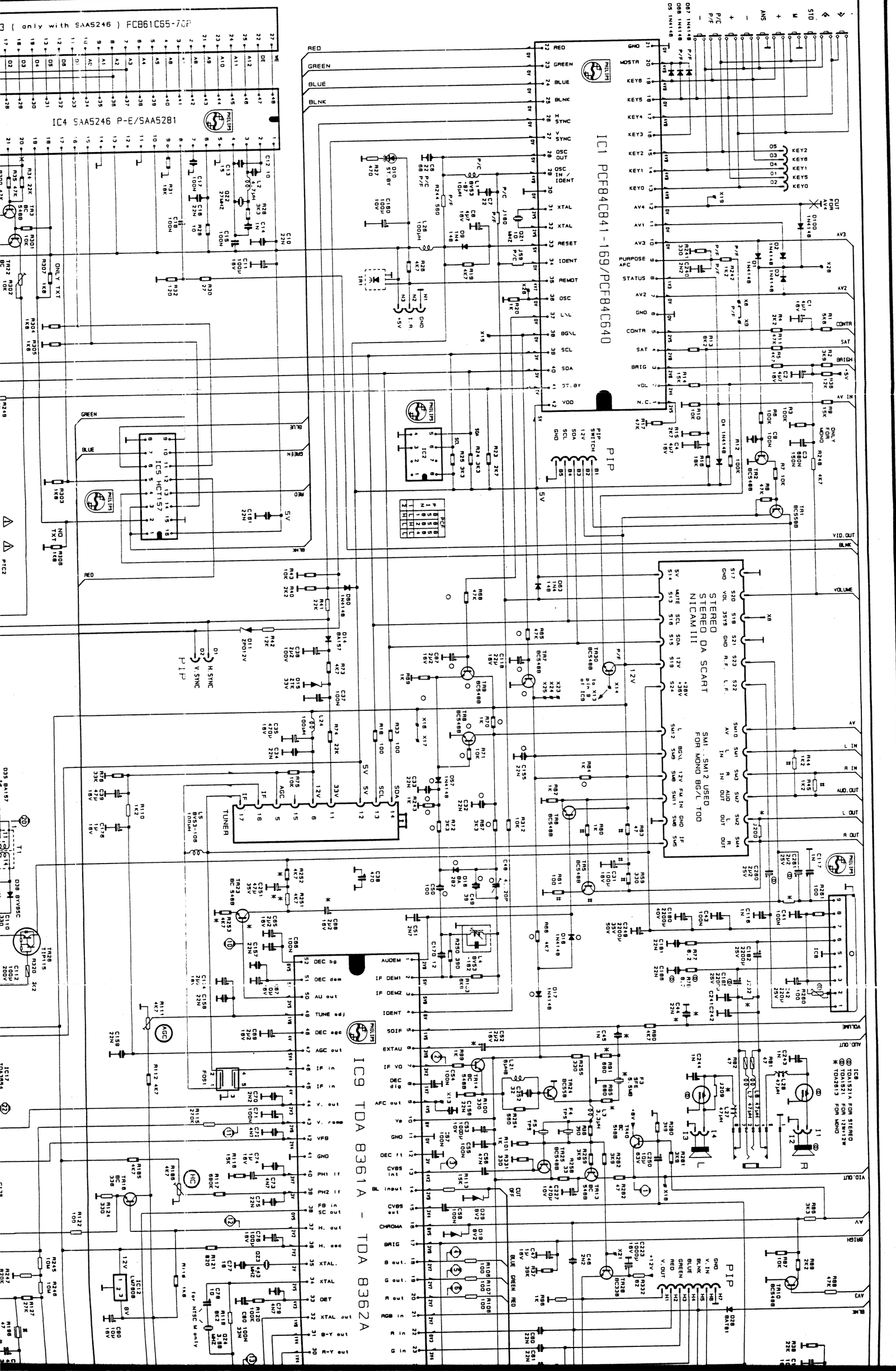


F 11 VIDEO OUTPUT AMPLIFIER & DRIVE



PINNING

1- Blue input
2- low voltage input
3- Green input
4- Red input
5- high voltage input
6- Red cathode current
7- Red output
8- ground
9- Red feedback
10- Green output
11- Green cathode current
12- Green feedback
13- Blue output
14- Blue cathode current
15- Blue feedback


IC1 PCF84C841-169/PCF84C640
IC4 SAA5246 P-E/SAA5281
3 (only with SAA5246) FCB61C65-70P
IC9 TDA 8361A - TDA 8362A
IC5 HCT157
PIP
STEREO DA SCART
STEREO NICAM III
SM1 SM2 USED FOR MONO BG/L TOO
TUNER
RED
GREEN
BLUE
BLNK
CONTR
SAT
BRIGH
VOLUME
AV IN
VID.OUT
AUD.OUT
ONLY TXT
NO TXT
H.SYNC
V.SYNC
5V
12V

IC8
TDA1521A FOR STEREO
TDA1521 FOR 12W+12W
TDA2613 FOR MONO

STEREO
STEREO DA SCART
NICAM III

SM1..SM12 USED
FOR MONO BG/L TOO

PIP

IC9 TDA 8361A - TDA 8362A

TUNER

IC5 HCT157

IC2

IC13 HEF4053

IC10 TDA 8395

IC11 TDA 4661

IC12 LM7808

SC1

PCF

PIN	8	8	8	8
	5	6	7	8
	8	8	8	8
	1	2	3	4
1	L	H	L	L
2	H	L	L	L

IC8
TDA1521A FOR STEREO
TDA1521 FOR 12W+12W
TDA2613 FOR MONO

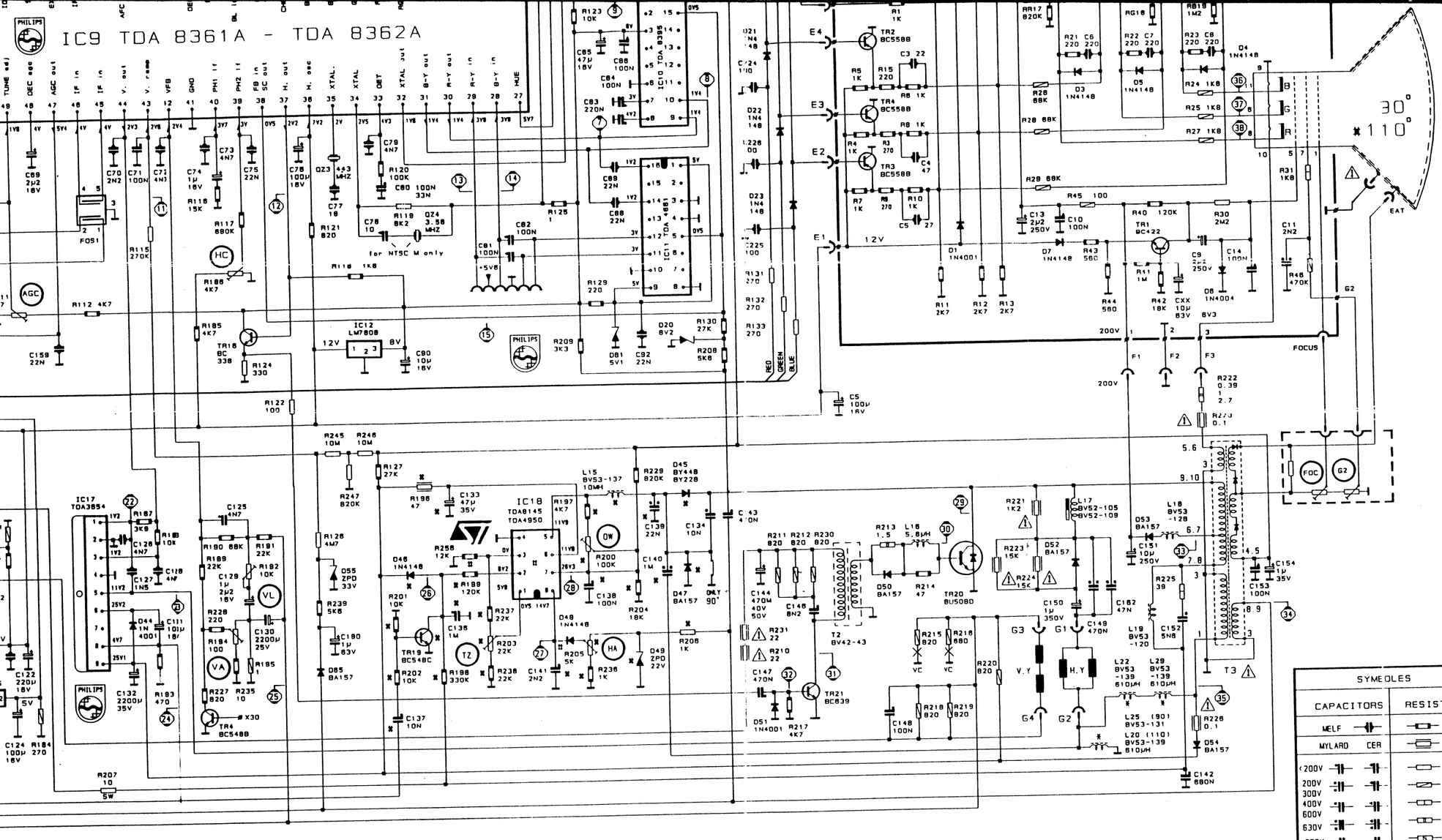
IC9 TDA 8361A - TDA 8362A

P/C Only with PCF8/C841
P/F Only with PCF8/C640
* Only for mono
# Only for mono bg
Only for stereo
o Only for BG/L

F-11 R5

38 H 100Vpp
37 H 100Vpp
36 H 100Vpp
35 H 220Vpp
34 H 65Vpp
33 H 90Vpp
32 H 1,5Vpp
31 H 40Vpp
30 H 10Vpp
29

IC9 TDA 8361A - TDA 8362A



SYMBOLES	
CAPACITORS	RESISTORS
MELF	MELF
MYLARD CER	FUS.
<200V	1/4 W
200V 300V	1/2 W
400V 600V	1 W
630V	2W
>650V	5W

110° ADJUST R203 FOR PROPER TRAPEZIUM

MIT R203 TRAPEZENTZERRUNG EINSTELLEN

REGLER R203 POUR AJUSTER LE TRAPEZE

(TZ) REGOLARE R203 PER CORREGGERE IL TRAPEZIO

110° ADJUST R200 FOR PROPER PIN-CUSHION

MIT R200 KISSEN EINSTELLEN

REGLER R200 POUR AJUSTER LE COUSSIN

(OW) REGOLARE R200 PER CORREGGERE IL CUSCINO

(AGC) AUTOMATIC GAIN CONTROL

AUTOMATISCHE VERSTARKUNGSREGELUNG

CONTROLE AUTOMATIQUE DU GAIN

CONTROLLO AUTOMATICO DEL GUADAGNO

(FOC) FOCUS

BILDSCHARFE

FOCUS

FUOCO

(G2) SCREEN GRID

SCHIRMGITTERSPANNUNG

TENSION DU GRILLE-ECRAN

GRIGLIA SCHERMO

IC9 TDA 8361A - TDA 8362A

IC3 (only with SAA5246) FCB61C65-707

IC4 SAA5246 P-E/SAA5281

IC5 HCT157

PIP

TUNER

FOS1

IC12 LM7808

IC14 TDA4601

IC15 LM317

IC16 LM7805

IC17 TDA3654

TR4 BC548B

TR18 BC 548B ON-OFF

TR22 BC 548B

TR23 BC 548B

TR26 TIP115

TR27 BC548B

D14 BA157

D15 ZTK 33V

D11 ZPD12V

D35 BA157

D55 ZPD 33V

D85 BA157

D46 1N4148

D80 1N4148

D31 1N4007

D32 1N4007

D33 1N4007

D34 1N4007

D38 1N4001

DJ1 BYV85C

D38 BYV85C

D39 BYV85C

D42 BYV85C

D43 BYW95A

D44 1N 4001

TR15 BU508A

T1

L2 4.7µH

L5 BY53-108 100µH

L7 DEGAUSS

L8 47µH

L9 47µH

L10 BY53-1.7 2*47µH

L11

L12

L13 BY53-132

L14 270µH 810mA

L24 100µH

FU1 T2AH

OZ2 27MHZ

OZ3 4.43 MHZ

OZ4 3.58 MHZ

for NTSC M only

PTC1

PTC2

ONLY TXT

NO TXT

ON-OFF

PIP

TUNER

AGC

SCL

SDA

5V

8V5

12V

33V

TOP

220-240

P1 P2 P3

A1 A2 A3

RED GREEN BLUE BLNK

H.SYNC

V.SYNC

15.17

6.8

⚠ For safety reasons replace the marked components with original ones only

1 H 1,5Vpp

2 H 2,5Vpp

3 H 1,7Vpp

4 H 4Vpp

5 H 4Vpp

6 H 4Vpp

7 H 0,5Vpp

8 H 0,7Vpp

9 H 0,25Vpp

10 2Vpp

11 V 1,2Vpp

12 H 2Vpp

13 H 0,9Vpp

14 H 1,3Vpp

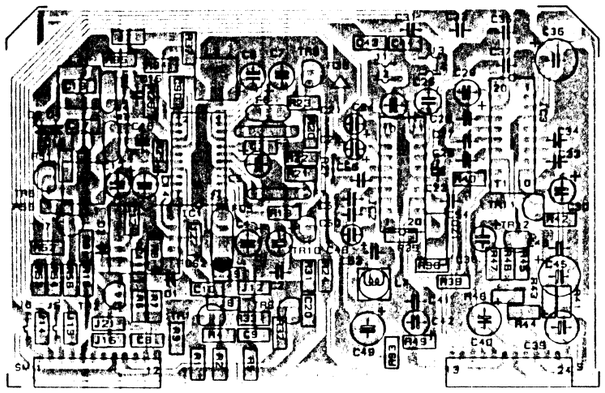
15 H 6Vpp

16 H

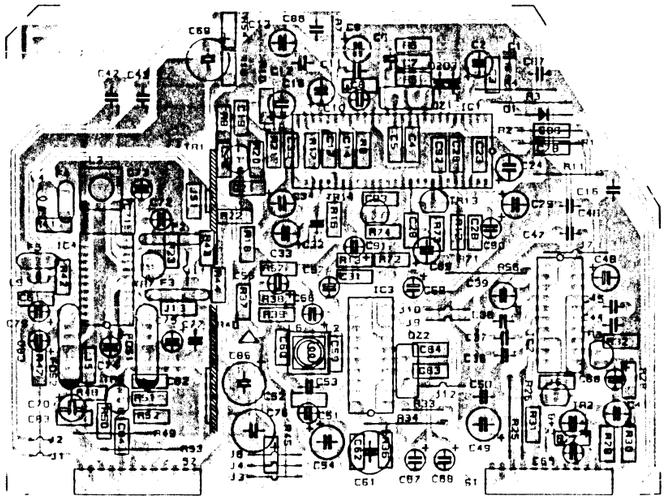
ADJUSTMENT	90° 110°	ADJUST R186 TO CENTRE THE PICTURE HORIZONTALLY
EINSTELLANWEISUNG		MIT R186 HORIZONTALE BILDLAGE EINSTELLEN
REGLAGES		REGLER R186 POUR OBTENIR UN CENTRAGE CORRECTE HORIZONTAL
REGOLAZIONI	(HC)	REGOLARE R186 PER UNA CORRETTA CENTRATURA ORIZZONTALE
	90° 110°	ADJUST R194 FOR PROPER VERTICAL HEIGHT
		MIT R 94 VERTIKAL-AMPLITUDE EINSTELLEN
		REGLER R194 POUR OBTENIR UNE CORRECTE AMPLITUDE VERTICALE
	(VA)	REGOLARE R194 PER UNA CORRETTA AMPIEZZA VERTICALE
	90° 110°	ADJUST R192 FOR PROPER VERTICAL LINEARITY
		MIT R192 VERTIKAL-LINEARITAT EINSTELLEN
		REGLER R192 POUR OBTENIR UNE CORRECTE LINEARITE VERTICALE
	(VL)	REGOLARE R192 PER UNA CORRETTA LINEARITA VERTICALE
	90° 110°	ADJUST L25/R205 FOR PROPER HORIZONTAL WIDTH
		MIT L25/R205 HORIZONTAL-AMPLITUDE EINSTELLEN
		REGLER L25/R205 POUR OBTENIR UNE CORRECTE AMPLITUDE HORIZONTALE
	(HA)	REGOLARE L25/R205 PER UNA CORRETA AMPIEZZA ORIZZONTALE
	110°	ADJUST R203 FOR PROPER TRAPEZIUM
		MIT R203 TRAPEZENTZERRUNG EINSTELLEN
		REGLER R203 POUR AJUSTER LE TRAEZE
	(TZ)	REGOLARE R203 PER CORREGGERE IL TRAPEZIO
	110°	ADJUST R2 PIN-CUSHI
		MIT R200 EINSTELLE
		REGLER R2 AJUSTER L
	(OW)	REGOLARE CORREGGER

CHASSIS F11 R5

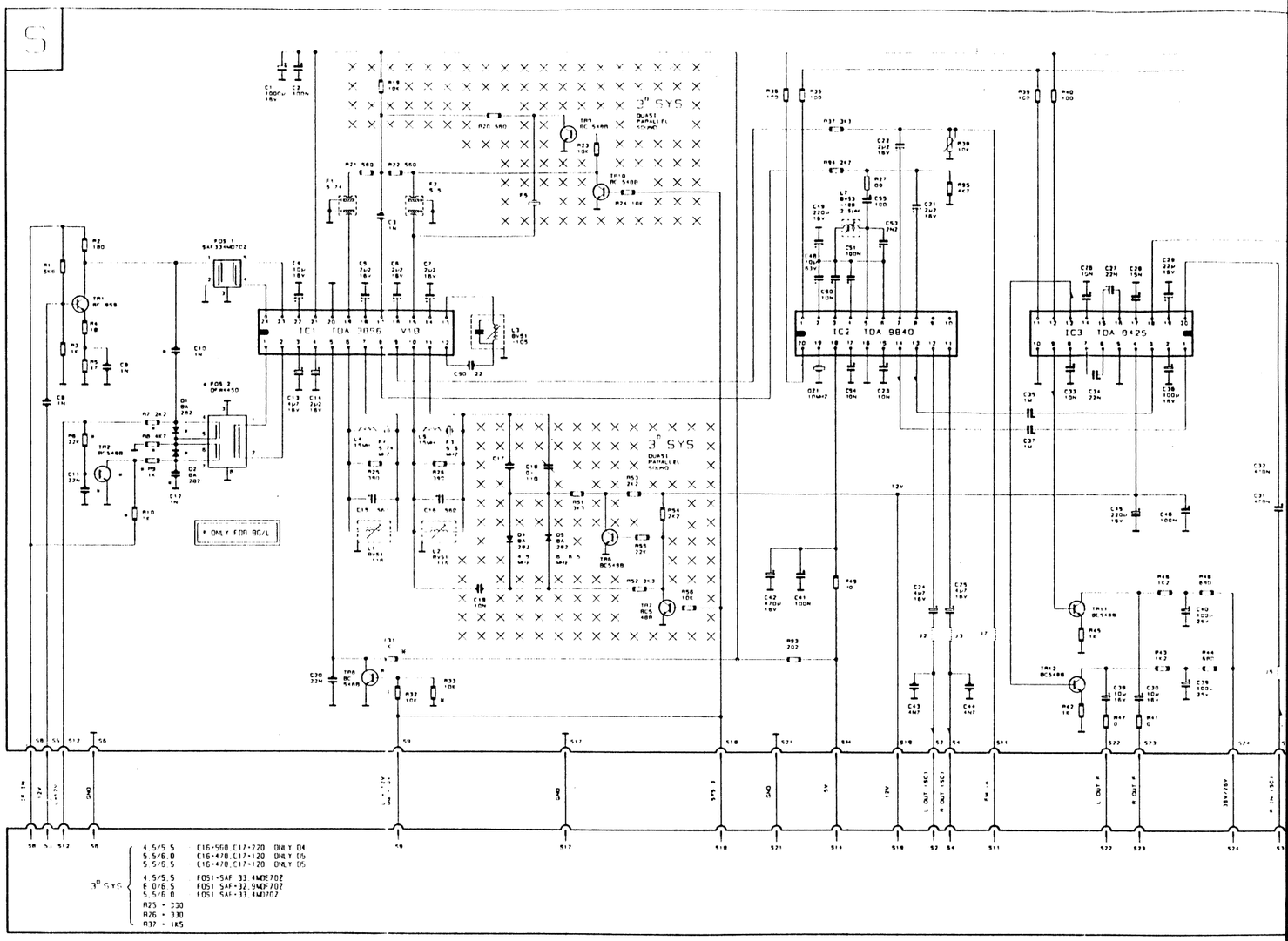
F.S. PCF84C640
F.S. PCF84C841/169

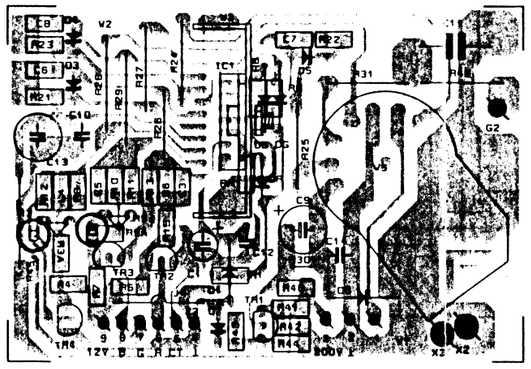


STEREO DECODER
TON STEREO
MODULE SON STEREO
AUDIO STEREO
SONIDO STEREO



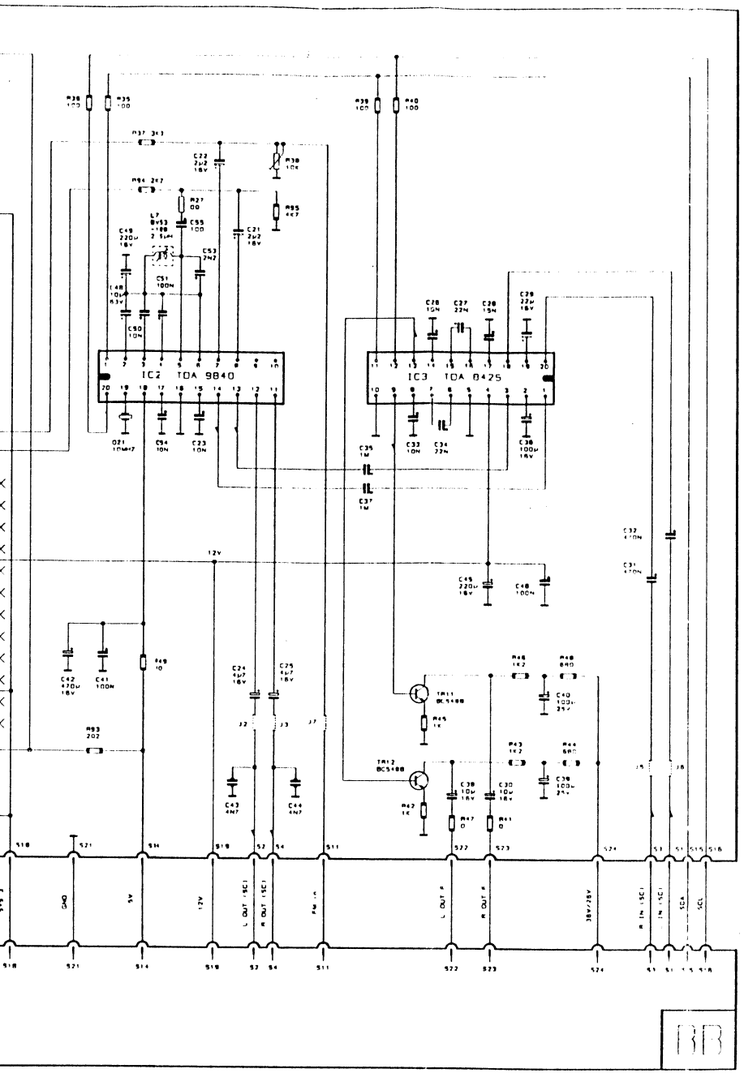
NICAM 3 DECODER
TON STEREO NICAM 3
MODULE SON STEREO NICAM 3
AUDIO STEREO NICAM 3
SONIDO STEREO NICAM 3

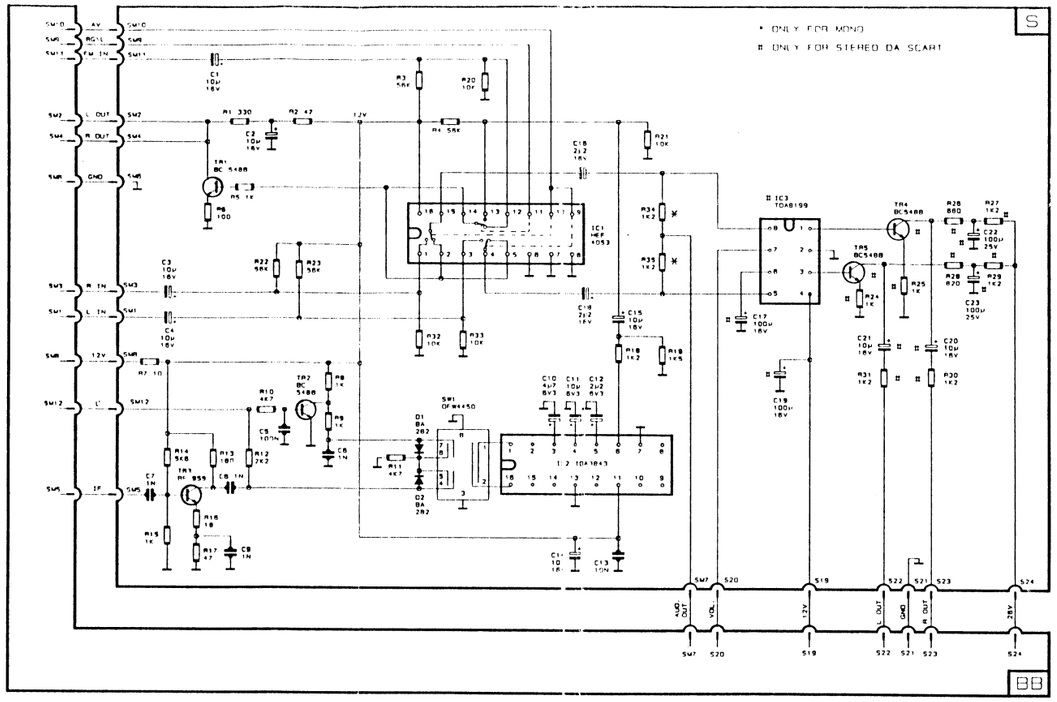


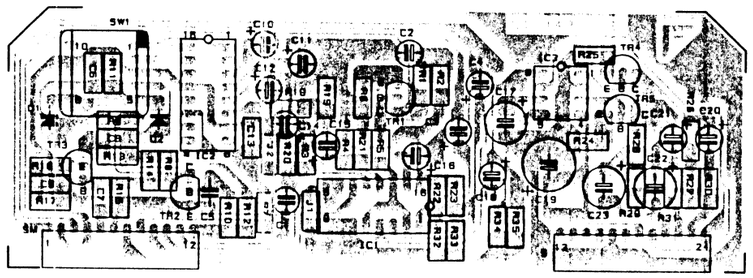


TUBE SOCKET
BILDROEHRENSOCKEL
SUPPORT TRC
ZOCCOLO CINESCOPIO
CIRCUITO IMPRESO ZOCALO

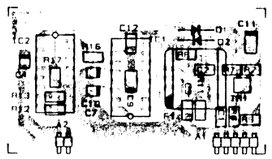
PLAN DR
BESTUECK
PLANS C
MAPPA LA
ZONA DE



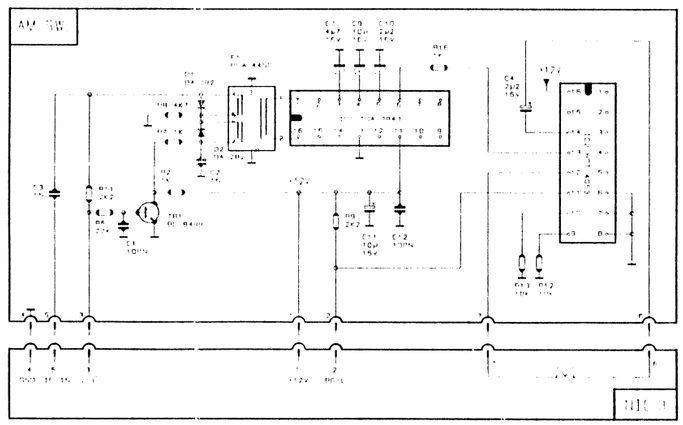




AUDIO/L+STEREO FROM SCART CONNECTOR
AUDIO/L+STEREO ÜBER SCART
SON/L+STEREO PAR LA PRISE PERITELEVISION
AUDIO/L+STEREO DA SCART
AUDIO/L+ESTEREO POR MEDIO DEL EUROCONECTOR SCART

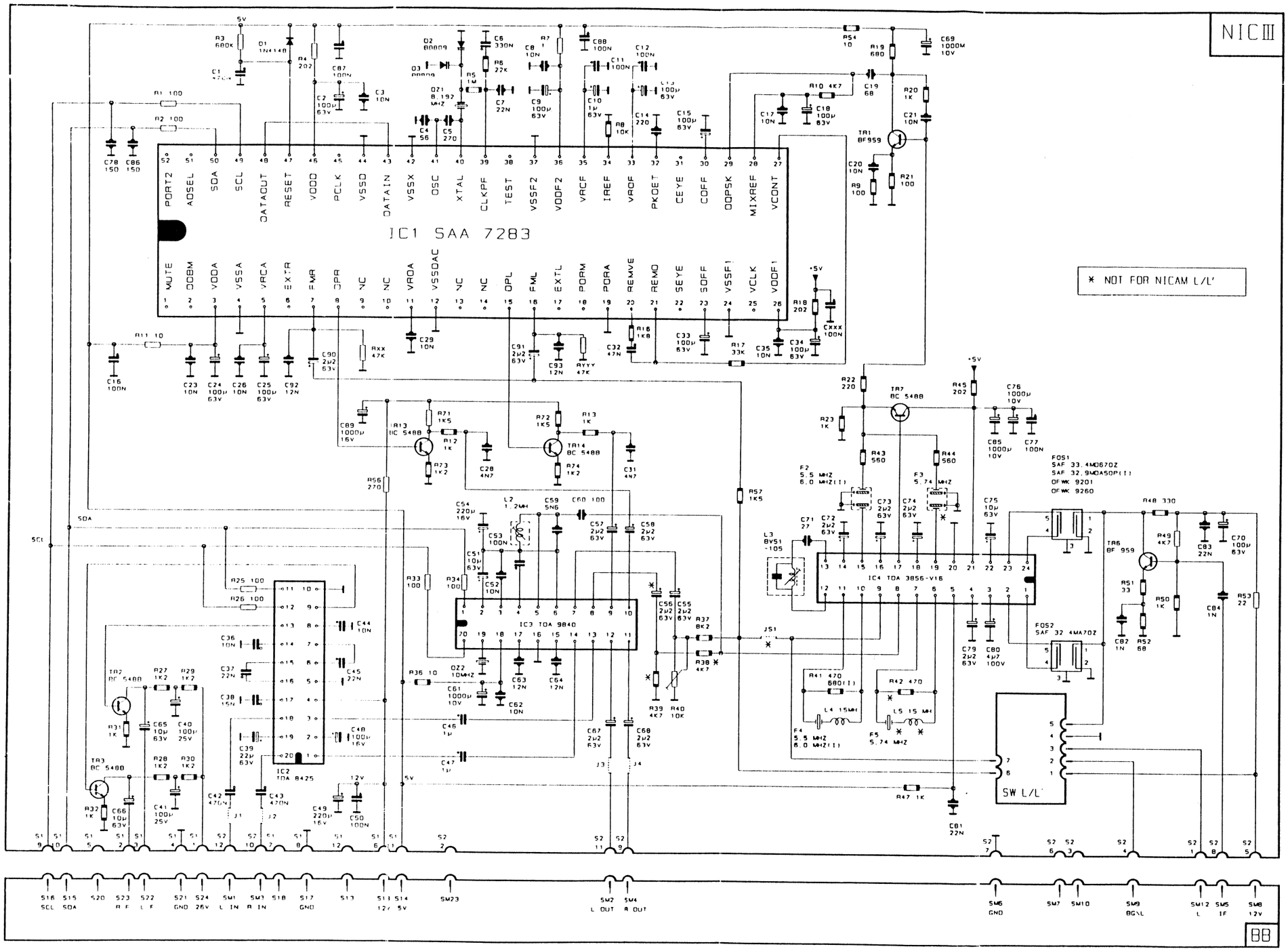


PLAN DRAWING COPPER SIDE
BESTUECKUNGSPLAN KUPFERSEITE
PLANS COTE CUIVRE
MAPPA LATO RAME
ZONA DE PISTAS (COBRE)



NICAM L AUDIO MODULE
MODUL FÜR NICAM L
MODULE SON POUR NICAM L
MODULO AUDIO PER NICAM L
MODULO AUDIO POR NICAM L

BOARD BASE
GRUNDCHASSIS
PLATINE MERE
TELAIO BASE
CIRCUITO IMPRESO CHASIS


NICIII
IC1 SAA 7283
PORT2 ADSEL SDA SCL DATAOUT RESET VDDD PCLK VSSD DATAIN VSSX OSC XTAL CLKPF TEST VSSF2 VDDF2 VACF IREF VROF PKDET CEYE COFF DDPSK MIXREF VCONT
MUTE DOBM VDDA VSSA VRCA EXTR FMR DPR NC NC VROA VSSDAC NC NC OPL FML EXTL PORM PORA REMVE REMO SEYE SOFF VSSF1 VCLK VDDF1
IC2 TDA 8425
IC3 TDA 9840
IC4 TDA 3856-V16
* NOT FOR NICAM L/L'
SW L/L'
SCL SDA R F L F GND 26V L IN R IN GND 12V 5V L OUT R OUT GND BG\L L IF 12V
88

BOARD BASE
GRUNDCHASSIS
PLATINE MERE
TELAIO BASE
CIRCUITO IMPRESO CHASIS